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DEVELOPING AND ADAPTING THE EXISTING AUTOMOTIVE BUSINESS MODEL: A CASE STUDY

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Abstract

Research purpose. The paper examines how to successfully adapt the existing business model, develop and introduce a new program in a company and gain new customers.

Design / Methodology / Approach. It has adopted a case study approach, with an online survey of customers' needs, interviews with employees, and Porter's five forces of competitive position analysis.

Findings. Based on the results of the study, an innovative business model has been proposed to enhance the company's business and ensure a sustainable business. The proposed low-cost Car Fix service brings additional customers to the company, as the most significant emphasis has been placed on ensuring a high level of service quality and consequently achieving high satisfaction of Car Fix service users, fostering the image and recognizability of the whole company.

Originality / Value / Practical implications. Due to the fast changes in the business environment, which is getting increasingly complex, resourceful management has to continuously develop, innovate and expand the company's customer base. The paper offers a template for how to analyze the competitive environment and introduce a sustainable competitive advantage.

Keywords: business process; business model; car service; service quality; customers.

JEL codes: M10; M30

Introduction

The shopping habits of various service users are changing rapidly. Even though car users want to maintain their vehicles at lower prices, they expect to maintain a high level of quality and an adequate guarantee for the service provided. Authorized car repair shops face the problem that customers seek cheaper car service immediately after the expiry of the factory warranty and consequently remain without a customer. This is the key reason that Avto Moste d.o.o. decided to introduce a new affordable service that will help gain new customers, especially users of vehicles for which the company is not authorized. The introduction and development of the low-cost Car Fix service is quite extensive and covers several areas. In the paper, we research the conceptual design of the project. Adjusting the business model can be the key to maintaining a company's competitiveness. Therefore, as a result of the above, companies are returning to strengthening their core activities and/or abandoning individual activities, which in the concept of core capabilities, do not achieve the desired economic effects. There is also a need for a change of mindset in marketing and especially in managerial minds. These policies are lowering the costs of business processes, increasing competitive advantage, sustainable growth, and satisfaction of all stakeholders involved.

Authorized car repair shops are forced, if they want to be successful, to constantly increase their customer base. They must do so in a way that maintains high loyalty of drivers of vehicles of brands for which they are authorized and to gain new customers with customized services. They must focus on the attitude of the staff and the high quality of their services at an affordable price. Goldberg (2015, 1)

argues that customer satisfaction and loyalty are the keys to the success of organizations operating in areas where there is intense competition. A loyal customer is crucial to a company as it brings in much more profit than customers who gain from aggressive marketing. The problem is not that our organizations do not realize that they need to be transformed. The problem is that organizations use administrative frameworks and infrastructure models that are outdated and maladapted to the current market conditions. Accounting, organizational hierarchies, and lean manufacturing were keys to success a decade ago. However, these management and development frameworks are no longer sufficient to successfully guide and protect the company in the age of software and changed customer habits (Kersten 2018, 22–24).

Scherpen, Draghici, & Niemann (2018) also argue that customer behavior in the automotive sector changed drastically, saying that the digital age demands adapting strategies to reach long-term customer loyalty and enterprise growth. Authors (ibid.) suggest the function of the car dealers has to be adapted and introduced innovative sales formats and technologies for the communication with the customer. There is also some evidence in the literature (e.g., Pawar, 2022) that the Covid pandemic, changes in technologies, and car (un)availability left a substantial impact on the buying behavior of customers, preferring to buy pre-owned cars or keep the existing car longer, which opens new opportunities for car maintenance and servicing. These structural movements in the market demand a study of an appropriate business model for new times, which represents a clear gap in research to investigate.

Literature review

Lee & Lee (2020) assert that the Industry 4.0 era caused a move in consumers' buying behaviors to mobile and/or online channels, activated by the newest digital technologies and an accessible overview of market service suppliers. It allows customers to easily recognize the offer, advantages, and price convenience, so loyalty is no longer that easy to obtain. Chatterjee et al. (2021) noticed a competitive dynamic in the automotive industry, demanding from companies dealing in this sector to review all the viewpoints of the value creation process, up to the customer service. The ever-faster customer evolution is strong leverage for companies that would like to avoid commercial volatility.

Having or discussing a business model has become very fashionable in the last decades (Di Tullio, Valentinetti & Rea, 2018; Shafer, Smith & Linder, 2005). A business model describes the company's creation, delivery, and values and how it happens in different cultural, social, economic, or other contexts. First, it has to be clear that the business model is not a strategy (Zott & Amitt, 2008). Araral (2020) explained that contingency theory suggests there exists no uniform strategy for companies and suggests that strategy depends on different contingency factors. It is possible to detect a wide range of studied contingency factors in the literature, Maletič, Maletič & Gomišček (2018), for example, studied internal (proactiveness and the long-term orientation) and external contingency factors (competitiveness and uncertainty). Other scholars also researched aspects of the technology (Levstek, Hovelja, & Pucihar, 2018), environment (Sinha, 2021), structural forms (Bals, Laine, & Mugurusi, 2018), marketing (Williams, Ashill, & Naumann, 2017), and how they influence strategy variables to explore the companies' performance.

Of course, there are many definitions of strategy to be found in the literature:

- Mintzberg (1994): it can be viewed as a pattern, plan, position, or perspective.
- Backward-looking context – pattern of choices.
- Forward-looking context – directional roadmap.
- Porter (1980) – choices about which products or services are offered in which markets, based on differentiating features.
- Drucker (1994) – choices about how business is conceptualized.

Common ground for all these respectable attempts to make a finite definition is that it has something to do with making a choice. Business models reflect these choices and their operating implications, as they help to analyze, test, and validate relationships and interactions between the strategic choices and their consequences. Sometimes, managers converge these choices into a business model or several models simultaneously to decide which one is the best for their situation (Shafer, Smith, & Linder, 2005).

Authors (ibid) configure the business model definition as a depiction or reflection of the company's strategic choices and its basic logic for the creation and value capture in the context of their value network. Both acts, creation of the value, and how to capture this value are absolutely vital for the company if there is the wish to remain profitable in the longer run. The environment in which this happens is conditioned by a value network (external partners, distribution, suppliers, etc.) and relationships the company builds within these networks.

Gassmann, Frankenberger, & Csik (2014) argue that having a new product is not enough and propose a (magic) triangle of business models, in which they suggest that the following questions should be answered: who are the customers, what do we offer to them, how do we produce the offering and how do we create value. When managers answer these four questions and understand who is the target customer, what is the value proposition for the customer, which value chain is available and/or needed to create this value, and how the revenue model is designed to capture this value, then the company's business model turns into a tangible base for its re-thinking.

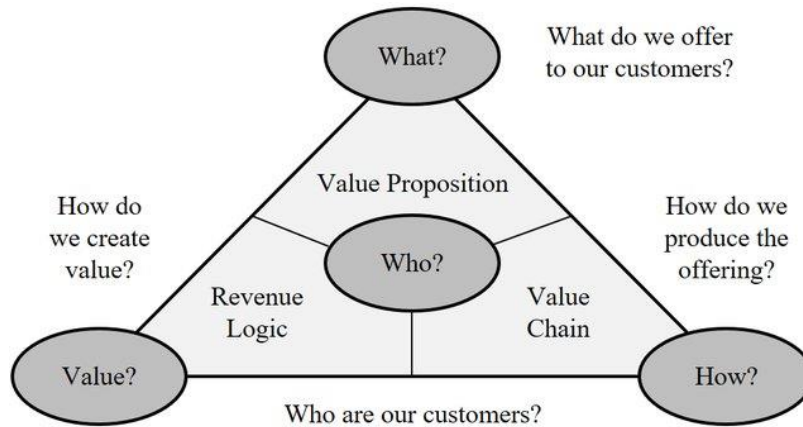


Fig. 1. Magic triangle of business models (Source: Gassmann, Frankenberger, & Csik (2014))

If the business model has been well thought through, it might bring a substantial competitive advantage to the company, but there are many problems that could arise along this process. It could happen, for instance, that it has been built upon wrong assumptions or that there are some restraints in consideration of strategic choices. It is also possible that some misapprehensions were made about value creation and its capturing. Or about the company's position inside the value network or the relationships between different stakeholders.

Business modeling is a vibrant and never-ending field of research and managerial practice. Some of the milestones and trends in business modeling, not pretending to be a complete and exhaustive review:

- Osterwalder & Pigneur (2010): BM Canvas;
- Boons & Lüdeke-Freund (2013): Sustainable BM;
- Ritter & Pedersen (2020): Digitalization of BM;
- Geissdoerfer et al. (2020): Circular BM;
- Seetharaman (2020): BM shifts - Impact of Covid-19.

Empirical study

The car service idea has been translated into an extended business model. Authorized car service shops are forced, if they want to be successful, to constantly introduce new offers, increase their customer base, and innovate their business model, providing quality service and acceptable prices. The study explores how to successfully introduce and develop a new program in a company and gain new customers. Methodologically the study represents a case study, using semi-structured interviews with the company's employees and an e-mail survey with customers.

The Car Fix idea started from the constatation that the cars that have been made in the last decade are all technologically very similar. Only servicing and maintenance are standardized, and built-in parts and accessories are a result of the same development and, in principle, the same manufacturers. To create a modern and high-quality service that performs maintenance of cars of all brands at a lower price in the form of the most common standardized maintenance and service services, with highly qualified service technicians.

Reasons for the introduction of this new model have changed shopping habits, expansion of services in the field of motoring, business economics, synergistic effects in the group, and value for money services. Conceptual design set the goal to establish a franchise network of Car Fix service centers, which offer services that are standardized, process-efficient and cost-effective, and user-friendly. They wanted to create a recognizable brand and become the most recognizable provider of fast low-cost service in the wider Ljubljana area. As an upgrade, it was planned to include the Car Fix service as part of the favorable offer on the loyalty card.

Critical gaps identified were grouped into four segments:

- Product and process: It is necessary to define services and processes and establish cost-optimal organization and logistics.
- Personnel: Identify the project manager and development of the Car Fix brand, educate employees, and communicate the core values of the new service to them.
- Financial: Limited resources for brand development.
- Communication: It is a new brand that needs to be actively communicated through various media channels.

Porter's (1985) five forces analysis has been made in order to research the business environment, fundamental shortcomings, and strong points:

- the risk of intense competition in the segment: The Car Fix program operates in the vehicle service segment, where there is intense competition, but it is definitely an advantage to enter a niche part of the segment, where with the argument of low price, high quality, qualified staff, and modern tools,
- risk of entry: of new providers For Car Fix, there is a medium risk of new entrants entering. As it takes a lot of expertise and a lot of special tools to start a service, which in turn leads to many costs, this is a significant barrier to the entry of new providers.
- risk of substitutes: With the Car Fix program, the strategy is such that it can achieve high quality and lower prices by using substitutes, thus attracting customers from authorized vehicle repair shops. At the moment, there is no danger that vehicle owners will no longer need service.
- the danger of growing bargaining power of customers: The low-cost Car Fix vehicle service is looking for its customers among all vehicle owners in Slovenia, with an emphasis on the Central Slovenian region, which means many opportunities for marketing and gaining customers, but it is challenging to tie customers. We can do this with loyalty cards and constant customer care, but they still have a free choice and can choose another service. Quality is paramount because due to the low differentiation of the service, the customer can easily go to another provider. It should also be borne in

mind that customers have more and more information online and through various "influencers", so it is necessary to adapt exceptionally quickly.

– the danger of growing bargaining power of suppliers: competition between suppliers of non-original spare parts is extremely high, so Car Fix has a massive choice of where and at what price to purchase material. As a result, the bargaining power of suppliers in the industry is relatively low.

In the design phase of the business model, Aris Express has also been used (N.d.) - a free online tool to model, analyze and manage the planned business processes. With the help of Aris Express, it is much easier to find out where problems occur in the process and which parts of the business process need to be focused on. In this way, we can also determine which roles and documents are related to a particular part of the process, and as a result, we can solve problems more comprehensively.

The survey was conducted in December 2019 and January 2020. At the beginning of December 2019, the survey questionnaire was sent to the e-mail addresses of all service customers collected in the customer base – 498 links. Respondents were offered the opportunity to answer the survey questionnaire via a personal computer. We also added a code to the link, with the help of which they were able to answer via mobile devices. Respondents answered ten questions in the questionnaire. These are closed-ended issues. For some survey questions, we used the five-point Likert scale, where respondents rate their agreement or disagreement on a scale of 1 to 5. Out of the total of 10 questions, 4 were questions of a demographic nature, so we used them to obtain sufficient data on respondents. The questionnaire was opened by 83 addressees. 59 addressees accessed the survey via a personal computer, based on the attached link to the survey. 21 people took advantage of the mobile access to the survey via mobile device, and 3 people opened the survey via google search engine. 41 people responded to the questionnaire, of which 26 were men and 15 were women. Most of them had completed secondary or vocational school, 15 respondents had completed higher education, 1 primary school or less, 2 had a master's degree, specialization, or doctorate. The data can also be seen in Figure 17.

The semi-structured interviews involved three receivers and a service manager, who are key people in the operation of the Car Fix service. They all answered all the questions and allowed us to do a proper analysis. All previously planned employees agreed to participate in the interviews, representing a 100% response rate. Research analysis: We conducted partially structured interviews with four people, namely the service manager and three service receivers. We conducted two interviews on February 5, 2020, and the third and fourth on February 6, 2020, at the company's premises. Interviews for the key people at Car Fix consisted of 16 questions focusing on three areas. We first asked them about their personal experiences, then we focused on their opinion on how customers see Car Fix service, and in the last set, we asked them for their opinion and suggestions on how to improve, supplement and make the service even more user-friendly.

H1: Factors of quality, past experience, and price are factors that influence the purchase of the Car Fix service

We used the variable Q6 (how likely a respondent would choose Car Fix), and a set of sub-questions Q4 (how much influence quality, price, and past experience have on the decision) to analyze the impact of three factors on the purchase of Car Fix services will need to perform multiple linear regression, which is presented in Table 1.

Table 1. Model summary (Source: authors' contribution)

Model	R	R square	Adj. R square	SD
1	.344 ^a	.119	.047	.860

The table above shows that the multiple correlation coefficient is 0.344, which means that it is a relatively weak explanatory model. In Table 2, we prepared the ANOVA test.

Table 2. ANOVA (Source: authors' contribution)

Model		Sum of squares	df	Mean squares	F	Variance component
1	Regression	3.681	3	1.227	1.660	.192 ^a
	Residuals	27.343	37	.739		
	Total	31.024	40			
a. Dependent Variable: On a scale from 1 to 5 mark: the choice of low-cost service Car Fix						
b. Predictors: (Constant), On a scale from 1 to 5 mark: Quality (1 = irrelevant, 3 = just right, 5 = very important), On a scale from 1 to 5 mark: Price (1 = irrelevant, 3 = just right, 5 = very important), Mark on a scale from 1 to 5: Past experience (1 = irrelevant, 3 = just right, 5 = very important)						

Table 3 shows that the statistical characteristic is greater than 0.05 for past experience and price, namely 0.99 and 0.678, while for quality, it is less than 0.05 for 0.049, which means that only the quality variable explains the decision to purchase the Car Fix service.

Table 3. Coefficients (Source: authors' contribution)

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	SD	Beta		
1	(Constant)	1.704	1.273		1.338	.189
	Previous experience	.002	.169	.002	.012	.990
	Price	.068	.163	.068	.419	.678
	Quality	.471	.252	.344	1.870	.049

If the importance of quality increases by one (e.g., from rating 3 to 4), the probability of buying a Car Fix service increases by 0.471. We reject H1, as only quality influences the decision to purchase the Car Fix service.

The problem could stem from the small number of units, so we also used satisfaction surveys available from Avto Moste and interviews with receivers and service managers to help clarify. All the interviews show that the company's employees believe that the decision of customers for Car Fix service has a tremendous impact, a favorable price, where it is especially important that the cost of repairs is known to the customer in advance. Interviewees also confirmed that quality is an essential factor, which is further confirmed by the result shown in the analysis of the survey conducted among users. Based on the high average values, the answers to the questionnaire received, and the interviews, we can conclude that reasonable price and quality are very important to users, and based on the answers, we can say that Car Fix meets these two expectations of users at a high degree. Regarding the third factor, which we predicted would have a significant impact on the respondents' decision to choose the Car Fix service, i.e., past experience, we can say that it did not seem decisive to either the respondents or the interviewees.

H2: For women, the factors chosen, such as price, quality, and past experience with the Car Fix service, have a more significant impact than for men.

Before performing the regression, it is necessary to recode the gender variable so that 1 will mean women and 0 will mean men. Based on the record variable, we prepared a regression model, which is presented in Table 4.

Table 4. Model summary (Source: authors' contribution)

Model	R	R square	Adj. R square	SD
1	.450 ^a	.202	.114	.829
a. Predictors: (Constant), SexRecZ, On a scale from 1 to 5 mark: Past experience (1 = irrelevant, 3 = just right, 5 = very important), On a scale from 1 to 5 mark: Price (1 = irrelevant, 3 = just right, 5 = very important), On a scale from 1 to 5 mark: Quality (1 = irrelevant, 3 = just right, 5 = very important)				

From Table 4, we see that the correlation coefficient is 0.450, which means that it is a relatively weak model. In the following, we prepared ANOVA to test the hypothesis, which is presented in Table 5. The statistical characteristic is more significant than 0.05, namely 0.079, which means that the model only explains the dependent variable purchase of the Car Fix service.

Table 5. ANOVA (Source: authors' contribution)

Model		Sum of squares	df	Mean squares	F	Sig.
1	Regression	6.275	4	1.569	2.282	.079 ^b
	Residuals	24.749	36	.687		
	Total	31.024	40			
a. Dependent Variable: On a scale from 1 to 5 mark: the choice of low-cost service Car Fix						
b. Predictors: (Constant), SexRecZ, On a scale from 1 to 5 mark: Past experience (1 = irrelevant, 3 = just right, 5 = very important), On a scale from 1 to 5 mark: Price (1 = irrelevant, 3 = just right, 5 = very important), On a scale from 1 to 5 mark: Quality (1 = irrelevant, 3 = just right, 5 = very important)						

Table 6 shows that all levels of features are greater than 0.05, which means that we cannot claim that there are differences between men and women in deciding to purchase Car Fix.

Table 6. Coefficients (Source: Authors' contribution)

Model		Standardized coefficients		Standardized coefficients	t	Sig.
		B	SD	Beta		
1	(Constant)	1,972	1,236		1,596	,119
	Mark on a scale from 1 to 5: Past experience (1 = irrelevant, 3 = just right, 5 = very important)	,006	,163	,007	,037	,971
	Mark on a scale from 1 to 5: Price (1 = irrelevant, 3 = just right, 5 = very important)	,017	,160	,017	,105	,917
	Mark on a scale from 1 to 5: Quality (1 = irrelevant, 3 = just right, 5 = very important)	,416	,245	,303	1,700	,098
	SpolRecZ	,533	,275	,295	1,942	,060
a. Dependent Variable: On a scale from 1 to 5 mark: the choice of low-cost service Car Fix						

We reject the H2 because gender does not affect the selected factors of price, quality, and past experience in purchasing the Car Fix service.

H3: For the most part, respondents are willing to replace the current service.

In order to test the hypothesis, we analyzed the question of how likely one would be to choose a low-cost Car Fix service. We will recode the values into three groups: 1-2 would not be replaced, 3 perhaps, and 4-5 would be replaced. We will then perform a nonparametric binomial test to determine if there are statistically significant differences between the proportions.

Table 7. Frequency table (Source: Authors' contribution)

		Frequency	%	Valid %	Cumulative
Valid	2 Unlikely	1	2.4	2.4	2.4
	3 Maybe	9	22.0	22.0	24.4
	4 Very likely	11	26.8	26.8	51.2
	5 For sure	20	48.8	48.8	100.0
	Total	41	100.0	100.0	

From Table 7 we see that only one person answered 'unlikely', nine people said 'maybe', 11 people were 'very likely', and 20 said 'for sure'. Due to the above distribution of answers, we would consider answers 2 and 3 as "I would not replace", and we would consider answers 4 and 5 as "I would replace". The statistical characteristic is 0.500, which means that it is greater than 0.05, which means that we cannot say with certainty that the majority of respondents would change the service. So, we do not accept the H3.

Findings

Porter's analysis of competitive (un)attractiveness of the market segment identified five forces that determine the actual long-term attractiveness of the market, and they pose the following dangers:

- the risk of intense competition in the segment: The Car Fix program operates in the vehicle service segment, where there is intense competition, but it is definitely an advantage to enter a niche part of the segment, where with the argument of low price, high quality, qualified staff, and modern tools, it can take many customers to authorized vehicle services. Since this is usually the strongest force in the industry, let us look at the most common approaches with which companies compete with each other. These are mainly: Price, Quality, Completeness of service, Customer support and after-sales services, Guarantees, Marketing and sales, Distribution network, and Innovations at the level of product and business model. We are pleased to note that the low-cost Car Fix service is extremely strong in all of the above factors, as it is an innovative model that has come out of a long tradition (as an authorized service), training, and high quality, as evidenced by customer feedback. Car Fix, as at an authorized service center). The industry is very stable and allows for long-term work, but constant adjustments and improvements are needed. As the location of the Car Fix service is in one of the most esteemed city districts, it is a positive factor in terms of frequency and the visit itself, but on the other hand, it increases the fixed costs, which is not good. Inventories can be kept at a reasonably low level due to the proximity of suppliers. However, the good thing is that the goods are not perishable, but care must be taken, as some spare parts are very specific and can quickly grow into dead stock.
- risk of entry of new providers: For Car Fix, there is a medium risk of new entrants entering. As it takes a lot of expertise and a lot of special tools to start a service, which in turn leads to a lot of costs, this is a significant barrier to the entry of new providers.

- risk of substitutes: With the Car Fix program, the strategy is such that it can achieve high quality and lower prices by using substitutes, thus attracting customers from authorized vehicle repair shops. At the moment, there is no danger that vehicle owners will no longer need service.
- the danger of growing bargaining power of customers: The low-cost Car Fix vehicle service is looking for its customers among all vehicle owners in Slovenia, with an emphasis on the Central Slovenian region, which means many opportunities for marketing and gaining customers, but it is complicated to tie customers. It can be done with loyalty cards and constant customer care, but they still have a free choice and can choose another service. Quality is very important because due to the low differentiation of the service, the customer can easily go to another provider. It should also be borne in mind that customers have more and more information online and through various "influencers", so it is necessary to adapt exceptionally quickly.
- the danger of growing bargaining power of suppliers: competition between suppliers of non-original spare parts is extremely high, so Car Fix has a vast choice of where and at what price to purchase material. As a result, the bargaining power of suppliers in the industry is relatively low.

So how attractive is the vehicle servicing industry and the segment in which Car Fix operates? So if we summarize the main factors that make the industry attractive, we can conclude the following for Car Fix: • There is not much rivalry between competitors; this is not the case for the vehicle service industry and the Car Fix program, but it puts most competitors at the edge with a different low-cost strategy. • Barriers to entry are relatively high; it takes a lot of knowledge, suitable premises, and also a lot of professional tools. • There are no smart substitutes; it is true at the moment, and this will be true for a few more years. It is not expected that customers would no longer need vehicle repairs or that they can do them in other ways. • Suppliers are in a poor negotiating position; it is true, there are many offers, and we can choose and change suppliers without special obligations. • Customers are in a bad negotiating position; not true; it is very difficult to tie customers to ourselves; we try, but, despite loyalty programs, they can immediately change their vehicle repairer. • The state does not implement special regulations that represent barriers to entry into the industry; it is true, or even vice versa, that the regulation is very much in favor of independent repairers, as the state has prevented the privilege of authorized repairers in the field of warranties, thus increasing the circle of customers for Car Fix.

The results of Porter's analysis can be interpreted in a way that the industry is partially attractive. It is very important that the Car Fix program has a precise strategy and that focusing on specific customers can be more successful and more profitable than competitors in the industry.

- Who are the customers? Customers of the low-cost Car Fix service are drivers who have a functional attitude towards the vehicle and are looking for fast and affordable service with which they can ensure the extension of safe and reliable driving. The service is intended for drivers of vehicles that are older and out of warranty (from 3-10 years) and drivers who find the authorized service too expensive, and drivers who do not think it makes sense to invest too much in the car. Primary target group: M: 30 - 55 years (lower and middle class); M + F: 25 - 65 years (technically unskilled people who are unfamiliar with where to take the car for service, young people who got the car from their parents).
- What do customers buy? Customers are buying a complete solution to extend safe and reliable driving. The service must be accessible, understandable, fast, and affordable, and it must also provide a way of solving more complex inspections and basic diagnostics.
- When do customers buy? The service should be available when customers have time to take care of the car. This is in the early morning and afternoon and on Saturdays. As the Car Fix service is located close to a larger shopping center, which is open until late, it is recommended that the opening hours are long enough.
- What factors influence purchasing decisions? In addition to price, accessibility, simplicity, fast execution, and quality of service and installed materials are important.

– How can we further improve customer satisfaction? In addition to service services, the customer can also become a member of the car loyalty club, where we can provide him with all services related to car ownership in an affordable way.

Based on quantitative research from user questionnaires and interviews with the head of service and desk receivers, key findings are presented, and analysis of hypotheses and recommendations to management on the basis of research results.

Quantitative research conducted on the example of the Car Fix program, examining the factors that are indicators of quality training, showed that the prevailing opinion among interviewees is that the quality of service is most important in customers' decision to use Car Fix services. Favorable price and pre-estimated repair costs are items that were highly rated in all interviews. Interestingly, in the position of service users, according to the received surveys, this was not perceived as a decisive factor in the choice of service. According to the employees who responded to the survey, the quality of service is also important, but it did not have as much weight as the good price. In terms of quality, the company also receives customer feedback after the services provided, which we also reviewed in the survey and found that there are virtually no negative responses, which can be considered as one of the indicators that Car Fix services are provided. Based on the interviews, we believe that the good feedback from customers and the excellent opinion of employees on the quality of services provided is also a result of regular and systematic training, which is conducted in the company for all employees of Opel Training Academy. Based on the interdependent results of the survey among users and the opinions of the interviewees, we conclude that past experience has a significant impact on loyalty, while the choice of service itself does not have such a significant impact.

Neither the respondents nor the interviewees think too much about the differences between female and male service users. When we asked them for their opinion on the importance of factors such as price, quality, and past experience in terms of gender, they could not identify and find differences. Prior to the start of the study, we expected women to be more careful in their decisions and that it would be more important for them to choose quality and affordable service. However, the interviewees did not notice gender differences in these factors. One of the interviewees expressed the opinion that women ask fewer questions about the repair course, but the other interviewees did not notice this in their work. In two interviews, we found that receivers at Car Fix service believe that women maintain their vehicles better; when receivers suggest that a particular component is in poor condition more often than men, they decide to rectify the fault or defect immediately. From this, we can conclude that they trust the professional staff more and consequently spend a little more money on the maintenance of their vehicle. Conversely, men are more likely to be reluctant to undergo counseling, and therefore major defects are more likely to occur.

As many as 31 out of 41 people answered the question about the readiness to replace an existing service with answers very likely or certainly yes, despite the fact that we could not accept the hypothesis. The interviewees are also of the opinion that customers are willing to replace the existing service, mainly due to dissatisfaction with the existing service, and some also due to a more favorable price or pre-determined package prices. As can be seen from the responses in the two interviews, we have two key types of customers. On the one hand, we have customers who are satisfied with and trust the existing service but are looking for a lower price and want to maintain the quality of service. For this type of customer, independent service is the ideal solution, but it is a condition that the customer maintains the warranty. The second type of customers service their vehicle with private mechanics and have a very varied experience. These customers are unwilling to pay much more; with independent service, they are attracted by greater trust and better-quality service.

In the interviews, the answers of the head of the service stand out, who believes that they would gain even more customers from other services if they emphasized longer opening hours and better-trained staff than the competition. He claims that the company is not aggressive enough in the field of marketing and that there is excellent potential in companies, as fast, affordable and quality service is even more important here. As a point of interest, it is necessary to mention that one of the interviewees thinks that some customers change the service all the time, as they always expect it to be even better.

Conclusions

The world seems to be changing very fast, and even activities for which physical contact has been essential are moving online. An excellent interactive website through which the customer can get accurate information, answers to questions, and set a date for a visit will be key to survival and growth in the years to come. Contactless business is also becoming more and more relevant, to which it will be necessary to adapt (e.g., Lee & Lee, 2020). We suggest that the company introduces the collection and delivery of customers' vehicles to their homes or workplace, as customers are willing to pay for this, which also increases customer satisfaction with the service provided. As the employees pointed out, there is also a need to offer companies that have a lot of use of their vehicles the possibility to repair their vehicle at night, as in this case, users are an essential tool without which they cannot do business. Even in this case, the value of the service would rise in the eyes of the client. We would also suggest that the network be expanded as quickly as possible for the sake of visibility, as this will create many positive synergy effects, such as joint marketing, knowledge sharing, and lower purchase prices of materials.

It is important to emphasize that there are always different segments of customers on the market. Once the company makes a thorough screening of the desired market and decides which target segment would like to “capture” with their offer, they have to understand what are the previous experiences, needs, and expectations of their customers or potential customers. Constant study of this segment and follow-ups have to be deployed to better understand them and to improve the positioning of their services. Habits of customers change, ways how to reach them change, and loyalty of customers is more and more questionable, but basic rules of marketing remain the same. Only when the market situation is well perceived, customers picked, and competition understood, the appropriate business model could be conceived, developed, and put into life.

The recommendations to the management are based on a preliminary in-depth study of the theoretical background of research constructs based on relevant scientific and professional sources and literature and the results of quantitative research. We note that the management correctly found that the offer to customers must be very transparent and straightforward. It is necessary to build on this and continue with the development. Ease of doing business is also crucial for employees who are in direct contact with customers, as in this way, they can do their job better and faster and also avoid all ambiguities and concerns of customers.

This case study's findings cannot be directly transferred to other companies, countries, or situations. However, the approach to developing a suitable business model could be of a good use for researchers and practitioners. Moreover, taking care of maintaining the satisfaction of existing customers and new ways of gaining technology-enabled potential customers can also be helpful in many other cases. It is necessary to be aware of the level of services or product features needed to satisfy and hopefully even impress our customers, as already has been suggested by Kano et al. (1984) when they were discussing the attractive and must-be quality, basic needs, and delighters.

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THE EFFECT OF THE DEGREE OF JOB SATISFACTION ON ORGANIZATIONAL LOYALTY: EMPIRICAL STUDY IN MASCARA EMPLOYMENT AGENCY

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Abstract

Research purpose. This study aimed to identify the effect of the degree of job satisfaction on organizational loyalty through the dimensions of salaries, incentives, and bonuses; conditions and nature of work; relationship with colleagues; and relationship with superiors.

Design / Methodology / Approach. We conducted an empirical study in the employment agency of Mascara for a sample of 53 questionnaires, where the SPSS program was used for statistical processing and data analysis, and to test the hypotheses, simple and multiple linear regression was used.

Findings. Based on the results of the SPSS adopted in testing the research hypotheses, the study concluded that there was no statistically significant effect of salaries, incentives, and bonuses; conditions and nature of work; and relationship with colleagues on organizational loyalty. In contrast, there is a positive effect of the relationship with superiors on the organizational loyalty of the employees of the employment agency.

Originality / Value / Practical implications. This study developed a model to investigate the relationship between job satisfaction and organizational loyalty. This study presents important implications for staffing agency managers wishing to improve job satisfaction in order to achieve organizational loyalty. At the practical level, these results can be used by managers in order to achieve organizational loyalty and identify problems.

Keywords: job satisfaction; organizational loyalty; employment agency; Mascara.

JEL codes: O15; M12.

Introduction

The success of any institution in achieving its goals depends primarily on the human resource, so it is necessary to ensure their loyalty and sense of belonging towards their institution and the extent of their ability to assume responsibility towards it and thus achieve compatibility between their objectives and the objectives of the institution.

Job satisfaction is one of the administrative concepts that have a practical impact on achieving compatibility and increasing loyalty to the institution. In quantitative terms, it appears that job satisfaction is the most-studied topic in the field of organizational behavior (Vigan & Giauque, 2018), as it is the basis that achieves psychological and social compatibility of employees and improves their performance. Increasing their motivation for work and production by satisfying their needs, desires, and motives in order to achieve job satisfaction for employees, which affects the quality of their performance, and then attain positive results that serve all parties and efficiently achieve the goals of the institution.

The achievement of organizational loyalty by employees depends on the availability of an acceptable level of satisfaction. The job is about services, about work, and about material and moral justice, which makes workers put forth the effort and accept the organization's goals and expect appropriate pay and incentives, considering that the relationship between the individual and the organization is reciprocal

and that each party has expectations from the other party. This is what Angle and Perry pointed out (Angle & Perry, 1981). Through this study, we will shed light on the impact of the degree of job satisfaction on organizational loyalty in the Employment agency of the State of Mascara. The envisaged problem can be formulated as follows: What is the effect of the degree of job satisfaction on organizational loyalty in the Employment agency. The sub-questions are:

- What is the effect of salaries, incentives, and bonuses on organizational loyalty in the Employment Agency?
- What is the impact of work conditions and its nature on organizational loyalty in the Employment Agency?
- What is the impact of the relationship with colleagues on organizational loyalty in the Employment Agency?
- What is the impact of the relationship with superiors on organizational loyalty in the Employment Agency?

In the midst of forming the study's problem and sub-questions, the following hypotheses were formulated. The main hypothesis *is as follows*: There is a statistically significant effect of job satisfaction on the organizational loyalty of the employees of the Employment agency under consideration. The following sub-hypotheses derived from the main hypothesis: 1) There is a statistically significant effect of salaries, incentives, and bonuses on organizational loyalty in the Employment Agency; 2) There is a statistically significant effect of conditions and nature of work on the organizational loyalty in the Employment agency; 3) There is a statistically significant effect of relationship with colleagues on the organizational loyalty in the Employment Agency; 4) There is a statistically significant effect of relationship with superiors on the organizational loyalty in the Employment Agency.

The importance of this study can be summarized as follows: the importance of the study stems from the possibility of benefiting from it in drawing plans and policies that help develop the organizational loyalty of employees in institutions; knowing the most critical factors that help in the formation of organizational loyalty; the study presents practical suggestions that apply to other institutions.

The objectives of this study can be summarized as follows: knowing some theoretical approaches to job satisfaction and organizational loyalty; identifying the level of job satisfaction among the employees of the institution; learning the impact of job satisfaction in terms of dimensions on organizational loyalty; determining the level of influence of job satisfaction on organizational loyalty; reaching results through which some recommendations can be formulated and submitted to the organization's management that will enhance the positive aspects and help improve job satisfaction among the employees of the institution.

In his study, the researcher relied on the descriptive analytical method to study the degree of influence of job satisfaction on organizational loyalty because this approach is commensurate with the school phenomenon.

Literature review

Definition of job satisfaction

According to Hoppock (Hoppock, 1935), job satisfaction is a combination of psychological, physiological, and environmental conditions that carry an individual to honestly say that I am satisfied with my job (Garg, 2014), (Thangaswamy, 2017). Job satisfaction is a positive or pleasant emotional state arising from an individual's work or work experience, and job satisfaction results from an individual's awareness of the extent to which work provides those things which he considers important (Aziri, 2011) (Phuong & Vinh, 2020).

According to Locke, job satisfaction refers to the positive feeling resulting from an individual's evaluation of his job or his experience in that job (Saari & Judge, 2004) (Pimentel & Pereira, 2022).

According to Kaliski (Kaliski, 2007), job satisfaction is the employee's sense of accomplishment and success in his work (Sharma, 2019).

Herbert believes that the concept of job satisfaction is the feelings of workers towards their work, and these feelings can be identified from two angles: what work actually provides for workers and what work should provide from their point of view (Herbert, 1989). Job satisfaction is a process in which an individual feels comfortable and relaxed when he performs his job tasks to the fullest (Shaikh et al., 2019). Job satisfaction, according to Smith in Rafida (Smith, 2020), is an affective, i.e., emotional, reaction to the work that results from a comparison made by employees between the actual results or rewards received with what employees want or expect (Mochklas, Fatihudin, & Takhul Huda, 2021).

According to Kumar, there are four basic self-evaluations that determine one's disposition toward job satisfaction (Kumar, 2016): self-esteem; general self-efficacy; locus of control; neuroticism.

Based on the preceding, it can be said that job satisfaction is an internal feeling of the individual represented in his feeling of happiness and satisfaction as a result of satisfying his needs and desires through the practice of the profession in which he works. In other words, it is a set of feelings towards the job, the material, psychological and social benefits it provides to workers, and the different attitudes towards the elements of work such as management, supervision, communication, social relations, salaries, and material and moral rewards, which leave an impact on the worker's performance level and productivity.

Factors affecting job satisfaction

According to studies, there are several factors that influence job satisfaction. These factors are the work itself, pay, promotion opportunities, supervision, and coworkers (Fred, 2005). According to Brenninger, to get satisfied employees and good results, supervisors have to adapt their leadership style. Supervisors should involve as many employees as possible. Employees must be motivated (Dziuba, Ingaldi, & Zhuravskaya, 2020). The sources of job satisfaction are as follows: individual characteristics, external environment characteristics of the contents of the job, and a person's suitability to the environment (Zalewska, 1999, p. 488).

Accordingly, it is possible to identify a set of factors that affect the level of employee satisfaction as follows: organization factors, working conditions, and personal factors.

Definition of Organizational Loyalty

Since the late 1960s and early 1970s, researchers' interest in organizational loyalty has increased, and it has been referred to loyalty as a positive assessment of an organization's willingness to work toward its organizational goals (Arqawi, Al hila, Abu Naser, & Al Shobaki, 2018). Organizational loyalty means the employee's willingness to put in the extra effort while adopting organizational values, attitudes, and beliefs in order to achieve the organization's goals. (Al-Qarioti & Freih, 2009). It is a feeling in which the employee belongs directly to the organization's objectives (Hamdan Rasheed , 2017). There are three bases for loyalty: compliance, identification, and internalization (Laksmi Sito & Thami Rachmi, 2016).

Organizational loyalty is a feeling of belonging to the organization that grows within the individual, that this individual is an integral part of the organization in which they work, and that their goals are achieved through achieving the goals of the organization. From here, the individual generates a strong desire to make more effort to achieve success for the organization. From all of the above, we can conclude that organizational loyalty is the existence of mutual loyalty between the individual and the organization in which it works.

Dimensions of Organizational loyalty

The dimensions of organizational loyalty have been identified and presented in detail (Boussalem, 2014; Mohammed Zaki & Ahmed Mohammed, 2018). Emotional loyalty- is the one that reflects the extent to which individuals belong to the institution and their association with its objectives. Moral loyalty (normative) - is the employee's sense of obligation to stay with the organization in return for the support he receives by contributing to setting goals, planning, and drawing up general policies for the

organization. Continuous loyalty - is in relation to an individual's assessment of the benefits of staying in the organization with the costs of leaving.

Regarding previous studies, research by Manisha Sharma (Manisha Sharma, 2019) aimed to identify the relationship between the dimensions of job satisfaction (workplace environment, training and development, and leadership) and employee loyalty. A sample of 100 questionnaires was used. The study concluded that there is a mixed effect of job satisfaction on employee loyalty (Sharma, 2019).

The study conducted by Grace Orinda, Joel Chepkwony, and Patrick Limo entitled Organizational Learning, Employee Satisfaction and Employee Loyalty in The Banking Sector, Nairobi County, Republic of Kenya, aimed to examine the influence of organizational learning, employee satisfaction and their loyalty in the banking sector, Republic of Kenya. A questionnaire consisting of 411 questionnaires was used from 2433 employees in the bank. The study concluded that organizational learning explicitly influences employee satisfaction, affecting employee loyalty (Orinda et al., 2020). The study conducted by Asli Nourdinne entitled A study of the relationship between job satisfaction and organizational loyalty workers in the hospital, public institution. The study aimed to identify the relationship between job satisfaction and organizational loyalty. They used 118 questionnaires from 363 workers in the hospital. The study concluded the presence of a positive correlation between job satisfaction and loyalty organization (Asli, 2012).

Research methodology

Study model

Given the importance of job satisfaction in organizations, we have tried to study its impact on organizational loyalty, considering that salaries, incentives, and bonuses, conditions and nature of work, relationship with colleagues, relationship with superiors are independent variables and organizational loyalty is a dependent variable, as seen in Figure 1.

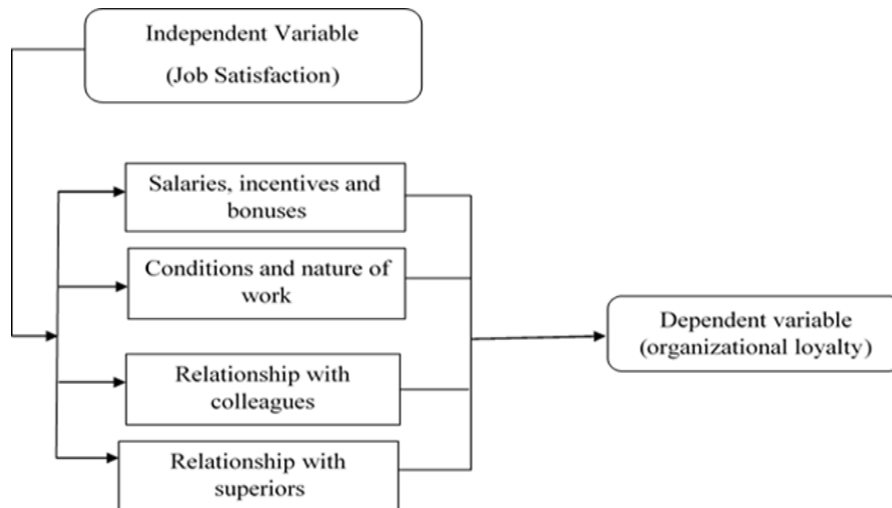


Fig. 1. Research variables (Source: prepared by the author)

Study Population

The study population was represented in a sample from the Employment Agency in the state of Mascara, where the studied sample consisted of the frameworks and workers of this institution, where 65 forms were distributed, and 60 forms were retrieved from them. After examining them, seven forms were excluded as seen in Table 1.

Table 1. Number of questionnaires distributed and retrieved and response rate (Source: created by the author)

	Number of	percentage
The total number of questionnaires	65	100
Retrieved Questionnaires	60	92.3
Non-refundable questionnaires	05	7.7
Excluded questionnaires	7	10.77
suitable questionnaires for the study	53	81.53

Study Tool

This study used the questionnaire basis of the five-point Likert's scale as a tool for data collection, which included three axes. The first axis deals with the personal variables of the study sample's vocabulary, which are: gender, age, educational qualification, and professional experience. The second axis is related to job satisfaction (salaries, incentives, and bonuses, conditions and nature of work, relationship with colleagues, and relationship with superiors. The third axis was devoted to organizational loyalty as a dependent variable. It should be noted that data unloading, tabulation, analysis, and interpretation were made using the statistical methods package SPSS version 22.

The categories of the five-point Likert scale and their significance were also determined, as shown in Table 2.

Table 2. Analysis scale (Source: created by the author based on five-point Likert's scale)

Category number	Categories field	Degrees	Categories Denotation
1	[1 – 1.8[	not agree completely	Very low degree of approval
2	[1.8- 2.6[	not agree	low degree of approval
3	[2.6 – 3.4[	neutral	Medium degree of approval
4	[3.4 - 4.2[	agree	High degree of approval
5	[4.2 - 5[	agree completely	Very High degree of approval

Research results

Reliability of the study tool

The validity and reliability of the study questionnaire were verified by using Cronbach's alpha test to measure reliability. The results were as follows in Table 3:

Table 3. Results of reliability (Source: created by the author via SPSS program)

	Dimensions	No. of	Cronbach's Alpha	
Job Satisfaction	Salaries, incentives, and bonuses goals	06	0.710	0.851
	Conditions and nature of work	07	0.675	
	Relationship with colleagues	04	0.867	
	Relationship with superiors	05	0.731	
organizational loyalty		12	0.774	
questionnaire		34	0.877	

From the results recorded in the above table, we note that the value of the coefficient Cronbach's Alpha is greater than the minimum acceptable value estimated at 60% (Warner, 2008), which means that the items have high internal consistency. This value is considered acceptable for study purposes.

Normality tests

Before analyzing the study axes, we tested whether the data followed a normal distribution or not using the Kolmogorov-Smirnov test, and the results of this test were as shown in Table 4.

Table 4. Normality tests (Source: Author via SPSS program)

	Test value	Prob value (Sig)
organizational loyalty	0.108	0.176
Job Satisfaction	0.114	0.081

We note from the above table that using the Kolmogorov-Smirnov test, it was found that the probability value (Sig) was greater than the significance level (0.05), which indicates that the data are subject to a normal distribution.

Demographic Profile

The results of the respondents' distribution profile can be illustrated in the following table.

Table 5. The demographic data of the respondents (Source Author via SPSS program).

Variables		Number of individuals	Percentage
Gender	Male	31	58.5
	Female	22	41.5
Total		53	100
Age	Less than 30 years old	9	17
	31 - 40 years old	29	54.7
	41 - 50 years old	10	18.9
	51 - 60 years old	5	9.4
Total		53	100
Professional Experience	0 - 5 years	14	26.4
	6 – 10 years	17	32.1
	11 - 15 years	15	28.3
	More than 15 years	7	13.2
Total		53	100
Educational Level	Professional education	03	5.7
	Secondary	13	24.5
	University level	37	69.8
Total		53	100

The results of the demographic profile of the respondents showed that 58.5 % of the sample members are males, and 41.5% of the sample members are females. The above table also shows that the age of 54.7% of the respondents ranged between 31-40 years old. Moreover, it showed that 32.1% of the respondents had professional experience ranging between 6-10 years, and with regard to educational qualification, we find that 69.8% of the respondents hold university degrees.

Descriptive Statistics

The results of the descriptive analysis of the study variables were as follows.

Table 6. Descriptive and correlation results (Source: Author via SPSS program)

		mean	standard deviation	degree of approval
Job Satisfaction		3.1398	0.53730	medium
organizational loyalty		3.5079	0.60519	high
Correlation				
		organizational loyalty		Job Satisfaction
Pearson Correlation	organizational loyalty	1.00		0.724
	Job Satisfaction	0.524		1.00
Sig. (2-tailed)	organizational loyalty	.		0.000
	Job Satisfaction	0.000		.

It is clear from the above that the degree of respondents' approval of organizational loyalty was at a high degree, based on the arithmetic mean value, which amounted to 3.5079, which falls within the fourth category of the five-point Likert scale in the field [3.4 - 4.2], which indicates the desire of workers to continue working in their agency.

As for the independent variable of the study represented by job satisfaction, its arithmetic mean was 3.1398, which falls within the third category of the five-point Likert scale in the field [2.6-3.4], which indicates that the respondents agree with a moderate degree about the existence of job satisfaction in the Employment agency.

Also, the results show that each of the constructs is positively and significantly correlated with each other.

Test of hypotheses

Main hypothesis test

To test the main hypothesis, we used the simple regression method, and the results were as follows:

Table 7. Results of Simple Linear Regression (Source: Author via SPSS program)

	R	R-square	Adjusted R-square	F	Prob (F-statistic)
Job Satisfaction	0.524	0.274	0.260	19.271	0.000
	B	Beta	T	Sig	
Constant	1.656	/	3.870	0.000	
Job Satisfaction	0.590	0.524	4.390	0.000	

As can be seen from the above, the significance level (sig) is equal to 0.000, which is ultimately less than the value of the statistical significance ($\alpha = 0.05$), which means that there is a positive effect of job satisfaction on organizational loyalty. The correlation coefficient (R) is equal to 0.524, which indicates the existence of a positive relationship between job satisfaction and organizational loyalty, while it is clear that the coefficient of determination (R^2) equals 0.274, which means that 27.4% of the variance in the dependent variable (organizational loyalty) is explained by the change in the independent variable (job satisfaction), and 72.6% is due to other variables not included in the model. Based on this, there is a positive effect of job satisfaction on organizational loyalty. The main hypothesis states that there is a statistically significant effect of job satisfaction on the organizational loyalty of the employees of the Employment agency.

Table 7 shows a positive effect of job satisfaction on organizational loyalty, based on (**Sig** = 0.000 < 0.05), and the Beta value indicates that the change in the relationship with superiors by one unit is offset by a change of 52.4% in organizational loyalty. Therefore, the functional relationship between the independent and dependent variables can be represented as follows:

$$\text{Organizational loyalty} = 1.656 + 0.590 \text{ Job Satisfaction}$$

Sub-hypothesis test

To test the sub-hypotheses, the multiple linear regression method was used, and the results were as follows:

Table 8. Multiple regression results (Source: Author via SPSS program)

	R	R-squared	Adjusted R-squared	F	Prob (F-statistic)
Job Satisfaction dimensions	0.726	0.527	0.487	13.348	0.000
	B	Beta	T	Sig	
Constant	1.675	/	4.687	0.000	
Salaries, incentives, and bonuses	-0.063	- 0.078	- 0.618	0.540	
Conditions and nature of work	0.016	0.017	0.118	0.907	
Relationship with colleagues	0.130	0.179	1.397	0.169	
Relationship with superiors	0.459	0.601	4.473	0.000	

From the above table, it was found that the significance level (sig) is equal to 0.000, which is ultimately less than the value of the statistical significance ($\alpha = 0.05$), which means that there is a positive effect of salaries, incentives, and bonuses, work's conditions and nature, relationship with colleagues, relationship with superiors on organizational loyalty. The correlation coefficient (R) is equal to 0.726, which indicates the existence of a positive relationship between salaries, incentives, and bonuses, conditions and nature of work, relationship with colleagues, relationship with superiors, and organizational loyalty. Meanwhile, it is clear that the coefficient of determination (R^2) equals 0.527, which means that 52.7% of the variance in the dependent variable (organizational loyalty) is explained by the change in the independent variable (job satisfaction dimensions), and 43.7% is due to other

variables not included in the model. Based on this, there is a positive effect of job satisfaction dimensions on organizational loyalty. Therefore, the main hypothesis, which states that there is no statistically significant effect of job satisfaction dimensions on the organizational loyalty of the employees of the Employment agency, is accepted.

The first sub-hypothesis: there is a statistically significant effect of salaries, incentives, and bonuses on organizational loyalty in the Employment agency.

According to the results displayed in the table above, where $R = .726$ and $p\text{-value} = .540 > 0.05$, we can conclude that the hypothesis gets rejected.

Second sub-hypothesis: There is a statistically significant effect of conditions and nature of work on organizational loyalty in the Employment agency.

According to the results displayed in the table above, where $R = .726$ and $p\text{-value} = 0.907 > 0.05$, we can conclude that the hypothesis gets rejected.

The third sub-hypothesis: There is a statistically significant effect of relationships with colleagues on organizational loyalty in the Employment agency.

According to the results displayed in the table above, where $R = .726$ and $p\text{-value} = 0.169 > 0.05$, we can conclude that the hypothesis gets rejected.

Fourth sub-hypothesis: There is a statistically significant effect of relationships with superiors on organizational loyalty in the Employment agency.

According to the results displayed in the table above, where $R = .726$ and $p\text{-value} = 0.000 < 0.05$, we can conclude that the hypothesis gets accepted.

Table 8 shows that there is a positive effect of the relationship with superiors on organizational loyalty, based on (**Sig** = 0.000 < 0.05), and the Beta value indicates that the change in the relationship with superiors by one unit is offset by a change of 60.1% in organizational loyalty. Therefore, we can write the multiple regression equation as follows:

Organizational loyalty = 1.675 + 0.495 Relationship with superiors

Conclusions

Paying attention to the organizational loyalty of individuals working in the organization calls for attention to their satisfaction with the jobs they occupy and the need to push them not to think about leaving the organization, whatever the reasons, and accordingly, this study aimed to test the effect of job satisfaction on organizational loyalty among employees of the Employment agency. As a culmination of what was reviewed by this study in the theoretical framework of the concepts related to job satisfaction and organizational loyalty, and their application in the practical aspect by examining the attitudes of the agency's employees, the study reached a number of results that answered the research problem, represented by the following.

- Job satisfaction is seen as the level of satisfaction of the individual's needs, and this satisfaction is achieved through multiple factors, some of which are related to the work environment, and some are related to the job occupied by the individual. These factors make the individual satisfied with their work and achieve their ambitions and desires. Job satisfaction has a significant impact on the level of individual loyalty; it represents the strongest determinant and the most significant influence on organizational loyalty.

- There is a high degree of organizational loyalty among the employees of the Employment agency.
- There is a moderate degree of job satisfaction among the employees of the Employment agency.
- The results of the study indicated that there is a positive impact of job satisfaction on organizational loyalty, which supports the opinions of Manisha Sharma (2019) and Asli (2012).
- The results of the study showed a positive direct correlation, and there is a significant effect of the dimensions of job satisfaction on the organizational loyalty of the employees of the Employment agency.
- There is a positive effect of the relationship with superiors on the organizational loyalty of the employees of the employment agency.
- The results of the study indicated that there is no positive impact of the salaries, incentives, and bonuses dimension on the organizational loyalty of employees in the employment agency.
- The results of the study indicated that there is no positive impact of conditions and nature of work dimension on the organizational loyalty of employees in the employment agency.
- The results of the study indicated that there is no positive impact of the relationship with colleagues on the organizational loyalty of employees in the employment agency.

Based on it, the study made a set of recommendations, represented by the following: salary and compensation promotion should be done according to staff's work experience and actual ability; the necessity to provide a working system which is acceptable by the employees; the necessity to improve working conditions.

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THE ISSUES OF DEFINING AND CLASSIFYING CULTURAL CENTRES

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Abstract

Research purpose. Cultural centres are multifunctional interdisciplinary cultural institutions that provide access to culture and a wide variety of cultural services, promote citizen participation in culture, offer lifelong learning opportunities and perform various other functions. Cultural centres are a phenomenon shared with many other countries, especially former Soviet republics; however, although historically different models of cultural centres have also been developed in Western countries, the field has been relatively little studied in an academic setting. The aim of this research is to study the problems of defining and classifying cultural centres, to identify the most characteristic functions of cultural centres in Europe and suggest a classification model based on the functions of cultural centres.

Design / Methodology / Approach. Research design is qualitative research. The research strategy uses qualitative research methods - the data extraction and analysis methods that are characteristic of qualitative research. The following methods were used: a comparative analysis of scientific literature, document analysis as well as secondary data analysis. Qualitative content analysis was used as the method of data analysis.

Findings. Although the literature review shows that there is no single definition and characterization of cultural centres in Europe, researchers generally identify three parameters that characterize most cultural centres (regardless of their legal form): multifunctionality (offer and functions); socio-cultural aspect and orientation towards the local community; having a building/technical equipment. The author has identified and proposed a chart with four main dimensions characteristic of cultural centres: art/culture; education; leisure/recreation; social.

Originality / Value / Practical implications. As a result of the study, the author has developed a model for classifying the functions of cultural centres, laying the ground for further academic research of cultural centres and their roles in society. The four main dimensions characteristic of cultural centres open new directions for research on the impact areas of cultural centres for a society: education, wellbeing, integration, community development, participation in culture etc. The results of the research will be used by the Association of Latvian Culture Centres for the development of cultural centres in Latvia. The research results will be partly used for further research within the framework of Dita Pfeifere's doctoral thesis. They will be useful for researchers in other countries who conduct research in the field of cultural centres. The practical implication of the research is related to the development of the Law on Cultural Centres in Latvia, clarifying terminology used in the law and the segmentation of cultural centres.

Keywords: cultural centres; cultural institutions; cultural policy.

JEL codes: Z1; M3.

Introduction

Although cultural centres as a phenomenon can be found in many countries around the world today, this study will examine the problem of defining and classifying cultural centres in the European context - on the basis that the genesis of cultural centres in Europe has been influenced by interrelated historical events that have taken place in a given geographical area, which have resulted in a public demand and corresponding national cultural policies to support the activities of this type of cultural institution. Cultural centres in Europe operate in a similar format of state/municipal intervention support, which is specific to the European cultural policy tradition, so their definitions, typology and operational functions at the European level are comparable.

Defining and classifying cultural centres as multifunctional interdisciplinary cultural organizations involves several important challenges that will be analysed in this article. According to researchers who

have focused on the study of cultural centres in Europe, both nationally and internationally, one of the main challenges in coming up with a comprehensive definition and classification of cultural centres is their great diversity and differences both in terms of their functions, activities, missions, and objectives as well as in the context of governance models and resource availability (Järvinen, 2021; Bogen, 2018). Unlike cultural organizations such as museums, libraries, theatres, concert halls, exhibition galleries etc., where the activities and basic functions of these cultural organizations can be clearly identified, the range of activities covered by cultural centres is so broad and varied that their classification and typology is a considerable challenge. It should also be borne in mind that the historical origins of cultural centres and their multiple patterns that have been developed over time, influenced by historical, political, cultural, and socio-economic processes, can vary widely across Europe, making the studying and conceptualization of these institutions even more difficult (Bogen, 2018; Järvinen, 2021; Eriksson et al., 2018).

There is also a lack of accurate data on the number and types of cultural centres in Europe, as the data are not collected and compiled in all European countries. The analysis of data available in the European online database of the *Compendium of Cultural Policies & Trends* cultural network shows a very different national approach to compiling statistical data on cultural centres, resulting in no systematic, comparable data on cultural centres in the European context (The Compendium of Cultural Policies & Trends, 2021). The researchers point out that the number of cultural centres in Europe today is hard to estimate as there is no reliable or comprehensive information available on this (Bogen, 2018; Järvinen, 2021). The information available on the website of the European Network of Cultural Centres provides a clearer picture of the types and number of cultural centres. The European Network of Cultural Centres was founded in 1994 to promote dialogue and cooperation between social-oriented cultural centres in Europe. The European Network of Cultural Centres (ENCC) represents more than 5,000 centres through 14 national networks, one regional network, five urban and rural/local networks, and 34 individual cultural centres from 27 European countries (ENCC, 2022). However, many European countries either do not have national networks and/or are not members of ENCC; consequently, there is no possibility of drawing objective conclusions based on ENCC. In order to obtain an objective picture of the number of cultural centres in Europe, a separate study would be needed within each country where the results obtained would be very useful in further research into the problem of cultural centres.

Although interest in research into cultural centres in the academic environment has increased in recent decades, there is still a lack of research at both the national and international levels on the functioning of cultural centres (Eriksson et al., 2018; Järvinen, 2021). The researchers from the University of Aarhus (Denmark) in the article “Forms and potential effects of citizen participation in European cultural centres”, state that “there are thousands of cultural centres in Europe alone with millions of annual visitors and actively involved citizens, however, the knowledge of the ways in which they engage citizens, and the social impact of their activities is limited. The lack of research on the social impact of European cultural centres can partly be explained by their diversity and variations. As institutions, they exist in multiple forms and even without an agreed name. The forms vary from the neighbourhood centre with a focus on community activities and local cultural forms; centres created and run by (groups of) artists; and the new creative hub that uses art and culture to boost entrepreneurship, innovation capacity and attractiveness of a city or region. The names, in various countries and languages, include such denominations as a ‘houses of culture, ‘centres for socio-culture, ‘citizens’ houses’ and ‘activity centres’” (Eriksson et al., 2018, page 207). Based on the, for the purposes of this article, the term cultural centre is used as a unifying term for all cultural institutions performing functions specific to cultural centres, regardless of the organization’s name, founder, and legal status.

The research goal is to study the problems of defining and classifying cultural centres, to identify the most characteristic functions of cultural centres in Europe and suggest a classification model based on the functions of cultural centres. Research questions: 1) what common aspects can be identified in the researcher’s definitions of cultural centres; 2) whether it is possible to identify the most characteristic functions of cultural centres and to propose a classification of cultural centres based on these.

This study will analyse the definitions of cultural centres offered to date in the academic environment to describe the types of cultural centres and their common and differing characteristics in the

international context (mainly European countries). Although the literature review shows that there is no single definition and characterization of cultural centres in Europe, researchers generally identify three parameters that characterize most cultural centres (regardless of their legal form): multifunctionality (offer and functions); socio-cultural aspect and orientation towards the local community; having a building/technical equipment. Based on a comparative analysis of the scientific literature, document analysis and secondary data analysis author has identified and proposed a chart with four main dimensions characteristic of cultural centres: art/culture; education; leisure/recreation; social.

Literature review

Although researchers point to limitations in defining cultural centres (which was described in the introduction of the article), scientific literature and research identify efforts to provide a definition of the cultural centre. According to Kristina Laurell Stenlund, the term 'cultural centre' (*Kulturhus* - in Swedish) can be used in a number of understandings, one of which refers to the cultural centre as a house/building where different cultural events take place. According to Stenlund, a cultural centre is a public building that hosts a variety of cultural activities or includes several cultural facilities: a concert hall, a library, a theatre, an art gallery, as well as restaurants and cafés that provide a meeting place for people. The cultural centre is a public platform for people to engage in cultural activities and to provide them with a cultural experience (Stenlund, 2010). The Finnish researcher Tomas Järvinen sees cultural centres as houses of versatile use for cultural activities: a versatile application is what distinguishes them from cultural venues used for a single purpose (Järvinen, 2021). Danish researchers offer the following definition of a cultural centre: "A cultural centre, in general, is a particular cultural institution that often combines art and creative activities (with spaces and technical facilities for exhibitions, rehearsal, performances, workshops) with a focus on diversity (a variety of activities, users and user groups), civic engagement, involvement of volunteers and openness to bottom-up initiatives. The centres are normally closely tied to the local neighbourhood and often run on a rather low budget (with a mix of public and sometimes private funding and tickets/fees) while at the same time offering open and flexible spaces and combining professional and amateur as well as cultural and social activities" (Eriksson et al., 2017, page 3). Paul Bogen defines cultural centres (according to Bogen- arts/cultural centres) as functioning, multi-disciplinary centres with some form of physical space and location (Bogen, 2018). According to Bogen, multi-disciplinary in this definition means more than one art form/discipline being part of an organization's activities (production and/or presentation) and relates more to arts/cultural centres than to performing arts organizations, that are most often devoted to a single discipline (Bogen, 2018).

According to Järvinen, there are many aspects that need to be considered when topologizing cultural centres and one of these aspects is their classification by organizational types. Järvinen points out that according to the organizational typology set out by management researchers Barry Bozeman and Hal G. Rainey, organizations can be divided into two main groups: private and public. Regarding cultural centres, he observes that "some are, for instance, joint-stock companies, some NGO's, others are maintained by municipalities or by the state. Some may even be joint ventures between private and public owners. The two fundamental categories seem nevertheless to be private and public, with some alternative combinations" (Järvinen, 2021, page 4). Paul Bogen also points out that specific performance differences exist between the state and municipality cultural centres financed by public funding (which in turn entails a degree of political and artistic oversight over these institutions) and the so-called 'independent' cultural centres (private legal structure such as an association, limited company, foundation, co-operative, NGO, etc.). Independent Arts/Cultural Centres refer to centres that are not state, regional or city-owned and managed institutions and, therefore, outside of and independent from political/artistic control (Bogen, 2018). However, as previously mentioned, the lack of data on European cultural centres complicates the accurate analysis of the proportion of public versus private sector cultural centres. Researchers also suggest that the organizational type of the cultural centre influences its mission, aims, and functions because public cultural centres are primarily related to the realization of national, regional, or municipal cultural policy goals. In contrast, private centres themselves decide which type of cultural services to provide (Bogen, 2018, Järvinen, 2021, Jurėnienė & Skaistė, 2018).

According to Bogen, when defining and classifying cultural centres, it is important to take into account the different use of the terms in different countries. He draws attention to the fact that the 'arts' and 'culture' have different definitions in English and non-English-speaking countries. "Arts as a term is primarily used in English-speaking countries to mean the Performance, Media and Visual Arts together with Literature. In most non-English speaking countries, the equivalent term used is either 'cultural' or 'culture'. Therefore, the term Arts/Cultural Centres can be used to encompass both the English and non-English speaking most common descriptions of the culture centres [...]" (Bogen, 2018, page 7).

Hungarian researcher Péter Inkei in his research about socio-culture, concludes that there is no single/conventional name for cultural centres in the international cultural policy arena which could be applied to these cultural institutions and the content they produce (Inkei, 2016). The problems of the development of cultural centres and their roles in culture policy have been analysed in the following contexts: in the context of cultural democratization and cultural democracy (Mulcahy, 2006; Dragičević Šešić & Dragojević, 2005), cultural decentralization (Kawashima, 2004), quality of life (Seed & Lloyd, 1997), access to culture, cultural rights and social participation (Laaksonen, 2010) and others. However, at the level of international cultural policymakers and researchers, a common definition of cultural centres has not been put forward, hence the use of terms such as "cultural centre", "socio-cultural centre", "cultural house", "community house", etc. Péter Inkei raises the issue of defining cultural centres as a separate cultural domain in the cultural policy agenda. He proposes to treat it as a socio-cultural domain and to use the term "socio-cultural centre", which has been used in Germany since the 1970s, as a unifying term for the various modifications of cultural centres. The German term 'Soziokultur' suggests two essential features of the concept: it is a sector at the crossroads of the cultural and social spheres, a hybrid. This approach highlights the fact that although cultural centres are primarily cultural institutions, their activities are very much related to society. Cultural centres often not only perform cultural functions but also cover areas that do not fall under the classical cultural sector, such as child and youth care, education, social services, urban development, and the environment. Socio-cultural centres serve the neighbourhood, the city, and the region. They are culturally, socially, or politically active associations, initiatives, and groups; their premises and technical facilities provide rehearsing and production opportunities for music and theatre groups, as well as studios for artists and others. They offer open space for debate and socializing (Inkei, 2016). However, as Inkei points out, there is no consensus among cultural policymakers and cultural centres themselves on this approach of bringing all cultural centres under the umbrella term 'socio-culture', as many cultural centres do not associate themselves with this term for various reasons (Inkei, 2016).

To summarise, there is a broad consensus among researchers on three aspects of the definition of cultural centres:

- 1) A cultural centre is a cultural institution that has a venue and appropriate technical equipment for cultural activities.
- 2) Multidisciplinarity of a cultural centre (regarding its functions, activities, and events).
- 3) Socio-cultural dimension of a cultural centre with a strong focus on local communities as its primary target audience.

The author has identified the following problems regarding defining and classifying cultural centres:

- 1) there is a lack of aggregated and comparable statistics on cultural centres in Europe;
- 2) no comparable statistics are available on the breakdown of cultural centres by organizational type;
- 3) there is no common cultural policy understanding of the field of cultural centres and the role of these cultural institutions in the implementation of national cultural policies;
- 4) different names are used for cultural centres in different European countries;
- 5) there is a lack of studies systematically collecting information on the diversity of functions and activities within cultural centres.

The further research aims to identify the most characteristic functions of cultural centres in Europe and suggest a classification model based on the functions of cultural centres.

Methodology

This article is a systematic, analytical review identifying challenges in defining and classifying cultural centres and proposing a classification model as a result of the study. The research strategy uses qualitative research methods - the data extraction and analysis methods that are characteristic of qualitative research. The following methods were used: a comparative analysis of scientific literature, document analysis as well as secondary data analysis.

Qualitative content analysis was used as the method of data analysis. In the context of the study, qualitative content analysis was used to identify the most frequently used definitions of cultural centres and the list of functions of cultural centres in academic literature, previous studies, cultural policy documents and normative acts. The statistical data on the number of cultural centres in European countries compiled by Compendium was also analysed to identify in which countries and by which dimension they are collected and compiled.

The issues of definition and classification of cultural centres were studied in two stages. In the first stage, a review of the existing theoretical approaches in the scientific literature and previous research on the topic was carried out. The main problems regarding the definition and classification of cultural centres set out by researchers were identified, and further research question was thereupon based on the identified problems. In the second stage, an analysis of scientific literature, documents and secondary data was carried out to provide an answer to the research question posed by the author.

Results

In order to find out what approach is used to classify cultural centres in the cultural policy discourse of European countries, an analysis of the available data provided by 43 European states in their culture policy online database, *The Compendium of Cultural Policies & Trends*, was carried out. *The Compendium of Cultural Policies & Trends* is the only database that, to the best knowledge of the author, provides in-depth information about European cultural policies and cultural institutions, including data about cultural centres. Analysis of the data revealed that the database's information on cultural centres is incomplete and does not provide a thorough overview of the field (the data is shown in Table 1). Data analysis leads to the conclusion that *The Compendium of Cultural Policies & Trends* tries to gather data about the number of cultural centres in Europe, as well as determine their belonging to the public or private sector. This approach is partly in line with the classification of cultural centres by organizational types analysed in the literature review. Data about mixed public and private model centres are not available. Despite creating a structure responsible for gathering data on the proportional investment of both public and private sector cultural institutions of the participant states into different aspects of culture, most of the 43 states have no data at all or only partial data available on cultural centres. Even then, it is mainly contained to public sector cultural centres. At the same time, it is essential to note that the database categorizes cultural centres under the domain of 'interdisciplinary', and the unified descriptor for cultural centres is socio-cultural centres/ cultural houses (The Compendium of Cultural Policies & Trends, 2022).

Table 1. Socio-cultural centres/cultural houses in Europe (Source: author's compilation)

Country	Total number of cultural centres	Public sector (Number of cultural centres)	Private sector (Number of cultural centres)
Czech Republic, Poland, Romania*	Data available	Data available	Data available
Germany	Data available		No data
Austria	No data	No data	Data available

Armenia, Azerbaijan, Belgium, Bulgaria, Estonia, France, Georgia, Hungary, Ireland, Latvia, Lithuania, North Macedonia, Malta, Moldova, Monaco, The Netherlands, Russia, San Marino, Serbia, Slovenia, Ukraine	No data	Data available	No data
Albania, Croatia, Denmark, Finland, Greece, Holy See, Italy, Lichtenstein, Norway, Portugal, Spain, Sweden, Switzerland	No data	No data	No data

In order to identify the functions of cultural centres that are highlighted in the cultural policy reports of European countries, an analysis of the national cultural policy profiles available in the Compendium of Cultural Policies & Trends database was carried out. It was found that the activities and functions of cultural centres are addressed in the different national reports in the following aspects: participation in cultural life (various forms of participation in cultural life, including traditional and amateur art activities); access to arts and cultural services (with a focus on local communities as its main target audience), the right to equal access to cultural activities (with a particular focus put on those parts of the population which are "socially excluded"); arts/cultural education and life-long learning; children and youth artistic education; intercultural dialogue and social integration; cultural heritage preservation; leisure and recreation - including sports activities and activities for different interest groups; political work and district/community work (The Compendium of Cultural Policies & Trends, 2022). Regarding the data summarised in Table 1, it can be assumed that the information in the cultural policy overviews is mainly relevant to public sector cultural centres and their activities.

As has already been pointed out, the multiple operating models of cultural centres that have developed over time vary widely across European countries. They have been shaped by historical, political, and socio-economic processes, as well as by the national, regional, and local specificities of each country. According to Bogen, “early examples of Arts/Cultural Centres’ in the biggest part of Europe can be traced back to initiatives established by labour movements in the late 19th and early 20th Centuries (up to the Second World War), which were extensive in Europe. For example, in England, they were part of Union facilities and civic buildings called People’s Palaces; in Scandinavia, Folkets Hus (People’s Houses) and in Spain, Ateneos or Casa del Pueblo’s” (Bogen, 2018, page 18). Bogen points out that these centres were not established as arts/cultural centres, per se, but encompassed a wide range of facilities not available to the broader community at that time, such as education, health care and social services. However, they often included spaces for arts and crafts and venues for theatre and music (Bogen, 2018). As an example of early cultural centres can serve the community centres built in Latvia and Estonia in the second half of the 19th century to provide space for various social, educational, cultural and leisure activities (Kulbok-Lattik, 2013; Cabinet of Ministers, 2009). In Bulgaria, cultural community centres were also established in the mid-19th century, the national name of which is *chitalishta*. As stated in the report of the United Nations Educational, Scientific and Cultural Organization (UNESCO), the first *chitalishta* were set up in 1856, and they have been a fundamental organizational unit of Bulgarian society ever since. *Chitalishta* performs cultural and educational activities aimed at safeguarding the customs and traditions of the Bulgarian people, ensuring access to information, and distributing knowledge. Nowadays, in accordance with the *Chitalishta Act* of 1996, *chitalishta* are non-governmental self-regulatory organizations. *Chitalishta* is central to the process of transmitting intangible cultural heritage in the country (UNESCO, 2017, Santova & Nenova, 2010).

According to Bogen, “after the Second World War, the rise of the welfare state across much of western, northern, and southern Europe and public funding for arts/culture allowed for Arts/Cultural Centres’ to both be established and supported by the state [...]. Furthermore, in the Soviet-controlled Eastern block of European countries, every city, town and often village had a state-run and managed ‘Culture House’, many of which still exist today” (Bogen, 2018, page 18). In the second half of the 20th century, alongside state and municipally subsidized cultural centres, various types of non-governmental and private sector

cultural centres began to emerge in Western Europe. As researchers at Aarhus University point out, cultural centres have historically combined different objectives in their activities, which means that their functions can vary widely. “These include promoting active citizenship through cultural and artistic activities, revitalizing abandoned industrial buildings and developing neglected urban areas, enhancing creativity, community, networks, entrepreneurship and innovation” (Eriksson et al., 2017, page 3). In Thomas Järvinen's study on private cultural centres in Denmark, the majority of cultural centre operators interviewed said that producing versatile cultural and arts offerings to residents was their core function. Several respondents emphasized that public sector cultural centres subsidized by the state/municipality perform broadly similar functions as private cultural centres and are a strong competitor to private cultural centres. However, the positive aspect of this competition is that private cultural centres are therefore looking for different innovative, non-traditional, contemporary forms of cultural activities and offer cultural services that are lacking in the municipality's cultural offer. At the same time, it is pointed out that cultural centres operating as businesses, in order to survive financially, need to be able to balance the performance of functions important for the development of society and culture with the provision of commercially viable services, which include the rental of premises, catering services, the organization of corporate business-to-business events, etc. (Järvinen, 2021). Paul Bogen's study on European private and non-governmental cultural centres indicates that 83% of the fifty arts/cultural centres surveyed rent out space in their buildings for a range of different purposes and activities, which plays an essential financial role in their business models. 84% of the centres either have a bar, cafe, restaurant, shop, or commercial art gallery in their buildings. As regards the functions performed by these centres in the field of arts and culture, the Bogen's study shows the following results: “the centres produce or present 13 different art form types, and on average, each centre presents or produces eight different art form types: 93% present or produce visual arts, 84% present or produce music, 82% present or produce theatre, 78% present or produce film/video, 60% present or produce dance, 53% present or produce club nights/party's, 49% present or produce new media, 47% present or produce outdoor festivals, 40% present or produce storytelling, 29% present or produce crafts, 29% present or produce comedy/cabaret, 24% present or produce circus/carnival, 22% present or produce literature, 24% of the centres present or produce ten or more different art form types. All centres' programmes include some form of education or participatory activities such as workshops, classes, debates, and lectures (Bogen, 2018, page 27). It can thus be concluded that private cultural centres perform artistic and cultural functions, educational and community engagement functions, as well as provide commercially viable services.

An important function of cultural centres, both private and public, is the provision of leisure and recreational activities for community residents. According to Lithuanian researchers, cultural centres are treated as one of the most important cultural institutions in Lithuania that organize recreational activities in local communities. This is explained by the fact that the network of cultural centres is vast, they are established in small towns and villages, and the activities organized by them are accessible to a large number of people (Jureniene & Stonyte, 2016).

Researchers also emphasize that cultural centres play an important role in the provision of cultural-educational, informal educational and educational activities in the local communities (Jurėnienė & Urbonienė, 2014; Urbonienė & Jurėnienė, 2015) and in the field of children and youth artistic education (Jurėnienė, 2012). Many cultural centres have a cultural heritage preservation function, especially in the field of intangible cultural heritage (Jurėnienė & Urbonienė, 2012). Lithuania is one of the few European countries with a law on cultural centres. The law defines the following functions of culture centres: “Centre for culture [...] fosters ethnic culture, amateur art through its activities, creates artistic programmes, develops educational, recreational activities, satisfies community cultural needs, and organizes dissemination of professional art” (Seimas, 2004). The Bulgarian Cultural Centres Act, on the other hand, defines the following functions: development and enrichment of cultural life, social and educational activities in the localities where they operate; preservation of Bulgarian folk customs and traditions; involvement of the population and expansion of knowledge about scientific, artistic and cultural values and achievements; strengthening of national identity; provision of access to information (National Assembly of the Republic of Bulgaria, 2020). The law on cultural centres has recently been adopted in Latvia too. It defines the following functions of municipal cultural centres: 1) organization of cultural, lifelong learning and continuing education activities; 2) ensuring the continuity of the Song

and Dance Festival tradition, ensuring the activities of amateur and folk art groups; 3) ensuring access to professional arts and culture, supporting creativity and the development of local creative industries; 4) preserving and developing the local cultural environment, identity and intangible cultural heritage; 5) promoting historical research and local studies, participating in the development of cultural tourism services; 6) identifying and gathering the cultural needs of the population living in the municipality (Saeima LR, 2022).

Nowadays, the role of cultural centres in building civil society is particularly emphasized, and the different forms of public participation implemented in cultural centres are brought to the fore. “In cultural centres “citizen participation” is frequently stressed as a key goal. Despite variations in organization, size, economy, and facilities, they all share the aim of involving citizens as participants in (voluntary) socio-cultural activities” (Eriksson et al., 2017, page 4). Also, the European network of Cultural centres highlights the importance of the activities of cultural centres for cultural equality, intercultural communication, democratization, and active civic participation (ENCC, 2021).

To sum up, cultural centres have historically developed as gathering places for the public and, at different stages of their development, have performed **not only cultural functions but also educational, leisure/recreation and various social functions**. In line with public demand and the needs of cultural policymakers, cultural centres continue to perform these functions today. When classifying the functions of cultural centres, it should be taken into account that private cultural centres also perform commercial/business activities.

Based on the analysis of the above information, the author proposes the following model for classifying the functions of cultural centres (see Table 2).

Table 2. A model for classifying the functions of cultural centres (Source: author’s compilation)

Dimension	Functions
Art/Culture	<p>Providing access to arts and cultural services;</p> <p>Producing/disseminating versatile cultural and art products (exhibitions, performances, concerts etc.);</p> <p>Providing communities with diverse cultural participation opportunities, including amateur art activities;</p> <p>Safeguarding cultural heritage, local traditions and ethnic culture;</p> <p>Collecting and distributing information on culture.</p>
Education	<p>Providing cultural education and informal education;</p> <p>Offering children and youth artistic education;</p> <p>Offering life-long learning opportunities;</p> <p>Offering education or participatory activities such as workshops, classes, debates and lectures.</p>
Leisure/Recreation	<p>Providing access/venue to leisure time activities;</p> <p>Organizing entertainment events;</p> <p>Organizing recreational events and activities.</p>
Social	<p>Providing integration activities;</p> <p>Advancing intercultural dialogue;</p> <p>Enhancing community participation, community work and volunteering;</p> <p>Promoting active citizenship through cultural and artistic activities.</p>

Conclusions

According to researchers who have focused on the study of cultural centres in Europe, one of the main challenges in coming up with a comprehensive definition and classification of cultural centres is their great diversity and differences both in terms of their functions, activities, missions, and objectives as well as in the context of governance models and resource availability.

Although the literature review shows that there is no single definition and characterization of cultural centres in Europe, researchers generally identify three parameters that characterize most cultural centres (regardless of their legal form): 1) multifunctionality (offer and functions), 2) socio-cultural aspect and orientation towards the local community and 3) having a building/technical equipment.

The author has identified and proposed a chart with four main dimensions characteristic of cultural centres: 1) art/culture; 2) education; 3) leisure/recreation; 4) social.

The author identifies other problems related to the definition and classification of cultural centres as areas for further research: the lack of comparable statistics/reports that would allow to compare the activities of cultural centres in several countries, as well as to assess the proportional importance of each identified dimension in the activities of cultural centres; to compare and assess the differences and advantages of different organizational and legal forms; to assess the instruments of cultural policy support in European countries to ensure the activities of cultural centres.

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VIDZEME REGION INHABITANTS' MEDIA USAGE SPECIFICS

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Abstract

Research purpose. There is a growing trend of society believing more and more in public broadcasting and media because they can objectively explain and reflect on what is happening in the world and Latvia. As the pandemic escalates, people are increasingly listening to what professional journalists and experts are saying. The survey organised by the National Media Council (neplpadome.lv, 2021) also shows that trust in public media in Latvia has been growing. However, one important challenge now is handling misinformation and false news, mostly seen on the Internet and social media. To be able to trace and analyse misinformation and false news that might have a significant impact on the population, first, it is important to identify the traditional and digital media as well as other Internet sources that have been frequently used by the population. The purpose of this study is to identify media platforms, including regional media, that are in daily use by the Vidzeme region's population.

Design / Methodology / Approach. A quantitative research method was used in this study, specifically, a survey, which consisted of a questionnaire comprising 18 questions on media use. Overall, 333 respondents living in the Vidzeme region participated in the survey. The questionnaire was designed in collaboration with Alberta College communication students. It included questions on traditional (TV, radio, magazines, newspaper) and digital media (portals, social media) that the population uses to access daily and weekly news.

Findings. 1) The most frequently used media are social media (87.5%), while the Internet (85.5%) is considered the most reliable source of information. 2) Regional media continue to be an essential source of information for local communities.

Originality / Value / Practical implications. Communication specialists of regional municipalities can use the results of the study to strengthen communication with the population via municipality websites and newspapers, thus, contributing to regional, local, and fast-growing micro-media ecosystem understanding. One limitation of the study is the limited scope of research, which is why the authors are planning to expand the research into the study of other regions of Latvia.

Keywords: digital media; traditional media; communication; Latvia.

JEL codes: M30; D1.

Introduction

In public relations, the use of media is an integral part of work because it is included in the standards of the public relations profession. It is essential to properly navigate through media publications in order to properly present organisations' activities in the public eye (Standard of Public Relations Profession, 2019), which can help to sustain and expand the clientele circles as well as enter new markets or sub-markets. This will ultimately reinforce the organisation's position on the market and will increase revenues and profits, which form the foundation of business success.

The currently approved term for media in Latvian is "media," but this concept does not include important aspects of activities that are delivered by media. According to different semantic interpretations of the concept of media, it can refer to a platform that conveys news, such as a newspaper, radio, news portal, etc., to an organisation, as in the case of a media company, and to the technological platform or technical

media (Beck, 2021). While all types of media structures are important to investigate, the one that directly impacts the population's views is a platform that publishes news. According to Diehl et al. (2016), in democratic nations, the formation of people's political views depends not only on the degree of people's susceptibility to persuasion but also on the information environment surrounding the population. Any information environment might be infiltrated by misinformation, which is incorrect or misleading information, and false news, in other words, fabricated news, which has become a global concern (Lazer et al., 2018). Fake news can be of different types, ranging from personal attacks to false information on political events, such as presidential elections or referenda, even in countries such as the USA and UK (Kanoh, 2018). Considering the increasing number of misinformation and false news that have been published on media platforms (Lazer et al., 2018), the public's views of reality might be distorted. The problem might be exacerbated by the increasing usage of social media platforms (Sterrett et al., 2019), which offer a platform for the delivery of information and engagement in conversations to anyone. However, it is not fully known how information fakes affect the views of the population (Lazer et al., 2018), though some research suggests that most Internet and social media users tend to agree that fake news creates problems (Kanoh, 2018). Some nations have established initiatives that can help the population to identify fake news. For example, various French news agencies, including Agence France-Press and Le Monde, have supported the development of "cross-check systems" for websites to identify fakes (Kanoh, 2018).

However, it is impossible to control the entire space of the Internet and social media, which is why people will continuously be exposed to fabricated information published on the web. Considering a wide range of online news platforms, social media sites as well as national user preferences, it might not always be obvious which of them are typically used by a specific group of the population. Therefore, the initial stage in the study of the impact of fake information on people's opinions is the identification of the media sites that are most frequently visited by a specific group of the population.

As it was mentioned earlier, the spread of fake information is a global issue, which is why Latvia, a small Baltic state, experiences it, too. In Latvia, in addition to national media and social media platforms, there are regional counterparts which form public opinion. The purpose of this study is to identify media platforms, including regional media, that are in daily use by the population of one region of Latvia – Vidzeme. The structure of the paper is as follows. The literature review section summarises the outcomes of studies on the impact of media on the population. The methodology section describes the research method used in the study. The results section outlines the key findings. The interpretation of the obtained results is available in the discussion section, while the conclusion section summarises the key outcomes of the study.

Literature review

Media play an important role in society because, by means of a message, they inform and connect individuals, organisations, and nations. The development of media (as an industry) significantly changed the initial concept of the role of media. Specifically, media turned from idealists' tribunes into business enterprises, which affect significantly wider areas and groups of the population than initially was thought was possible, and they transform the development of society (Veinberga, 2019). Such changes in the media role could be attributed to the evolving forms and ways of message delivery. Nowadays, media even co-shape people's daily activities because they constrain time and offer a specific set of news and other types of information (Beck, 2021).

The media range that is used in modern times is wide. It ranges from traditional forms of mass media communications, such as newspapers, magazines, radio and TV, and more recent digital formats, such as online news portals and social networks, which expose readers to different types of information, including news, whether readers actively seek it, or not (De Zuniga et al., 2017). Research on modern national, local, and hyperlocal media shows that new digital media formats do not fully replace more traditional media but rather change them (Coleman et al., 2016; Taipale et al., 2021). A summary of the usage of key media sources in the EU and Latvia is provided in Table 1.

Table 1. Use of media sources in the EU and Latvian population (Source: Media & News Survey, 2022, on Eurobarometer, 2015)

Media source	EU, %	Latvia, %
Television	75	51
Online news portals	43	45
Social media and blogs	26	41
Radio	28	39

Considering the focus of this research on Latvia, the next table summarises the information on specific media used in Latvia (see Table 2).

Table 2. Use of traditional forms of media in Latvia (Source: created by the authors)

Specific media	Users, %	Information source
Television		TV Meters (2021)
LTV1	11,9	
TV3	9,4	
Other foreign channels	41,1	
Radio		Research of radio target group (2021)
Latvijas radio 2	19,1	
Radio Skonto	11,5	
Periodicals		National press audience study (2021)
MK Latvija	17,3	
Ieva	11,8	
Kas jauns	11	

The data provided in Table 2 suggests that the Latvian population uses digital media more frequently than other forms of media. According to the Eurobarometer data (2015), 44% of Latvians use social media every day, 12% - do it twice or three times a week, 5% - a few times a month or less, 33% have never used social media, 6% do not have access to these media. According to Gemius' research (2022), the overall traffic of all websites increased. For example, the number of visitors to the portal la.lv rose by 56,000 users, while the readership audiences of apollo.lv and tvnet.lv received additional 55,000 readers in January in comparison to December. The number of jauns.lv users increased by 53,000 people (706,000 readers) (Review of Internet usage trends, 2021), while the readership of santa.lv increased by 80,000 users in January 2022 in comparison to December 2021 (TOP 20 most visited sites in January 2022). Such an increase in the use of online sites is consistent with global data. Web browsing increased by 70% in the late stages of the pandemic, which was followed by (traditional) TV viewing by 63%, and social media consumption by 61% (Priedola, 2020). However, it should also be mentioned that some other research findings indicate that the time spent on television, radio, or print media in Latvia did not significantly increase since the beginning of the pandemic (Media Literacy of the Latvian Population, 2020).

A wide variety of available media channels ultimately leads to the fragmentation of the audience - the division into narrow user niches. Consequently, media are to compete to attract and maintain their clientele (Lasmane, 2018). Such competition possibly leads to the improved quality of news and other

types of information. Therefore, the credibility of the Latvian media in the perception of Latvian users of media is improving, as evidenced by a survey organised by the National Media Council (see Fig. 1).

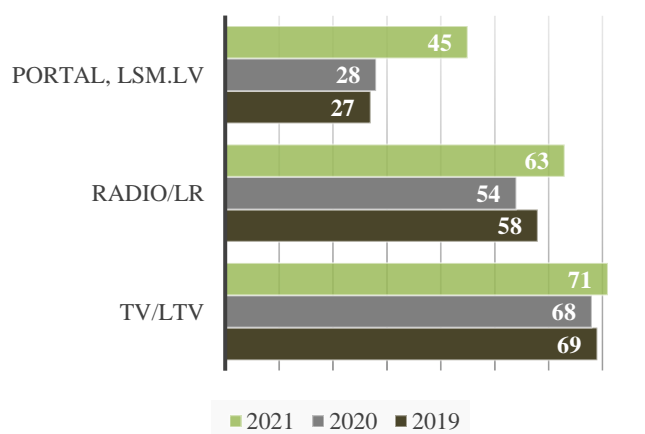


Fig. 1. Usage of Latvia State Media, the year 2019-2021 (Source: Media Literacy and Media Content Usage Habits of the Latvian Population, 2021)

Thus, the review of the national scope data of media use in Latvia points to the use of increasing use of digital sources of information. But the review of regional media suggests that not only digital but also traditional forms of media, including newspapers, are still popular. The concept of regional (local) media can be defined as follows: "geographically based, community-oriented, original-news-reporting organisations indigenous to the web and intended to fill perceived gaps in coverage of an issue of the region and to promote civic engagement" (Metzgar et al., 2011, p. 774). In 2006, 49% of the population read regional newspapers, including 35 morning and 17 weekly newspapers. In contrast to the national press, the regional press is much more popular (Veinberga, 2010). As for Vidzeme, the region selected for this research, public media remain highly popular, with 92% of the inhabitants still using them (Study of the Media Literacy and Media Content Usage Habits of the Latvian Population, 2021).

However, the media use trends in the population are not stable, which is why it is difficult to project them into the future. This happens because individuals, societies and the environment undergo transformations which are subject not only to macro-level but also micro-level changes (Rožukalne, 2009). Therefore, the media use by the Latvian population in 2022 might be significantly different from previous years. This provides one of the logical justifications of this research – to identify media use preferences in the population of the Vidzeme region in 2022.

A large number of media and media companies in Latvia create a fragmented media system, where several players operate in each segment of the media market, dividing a small audience into smaller readership groups. For example, in the city of Ventspils alone, there are three types of regional media – two printed issues, such as "Ventas balss" and "Ventspils," and one regional television channel, such as "Kurzeme Television." Overall, such high fragmentation of the media market in Latvian regions might be inefficient and constraining profits (Rožukalne, 2013). From this point of view, media use in each region of Latvia should be addressed in isolation and comparison to other regions and the overall national use, which is why this research focuses on the study of one Latvian region – Vidzeme.

Regional media are generally an interesting phenomenon because they contribute not only to the delivery of local (regional) news but also contribute to the various political processes, such as those of integration and disintegration (Lessa & Fontes, 2020), democratisation and elections (Stojarová, 2020). Their digital communications might even play a decisive role in campaigns both at the national and regional levels in Poland (Baranowski, 2022).

Overall, the review of both academic and professional sources on media use at the national and regional levels suggests that the study of regional media use is equally important to that of national media because they, too, form a public opinion that, in some cases, such as democratisation processes and elections, might be critical.

Research Methodology

A quantitative research method was used in this study, specifically a survey. To conduct the survey, a questionnaire of 18 questions was designed. The questionnaire was divided into two blocks – questions on demographic data and daily media use. The questions covered the daily and weekly use of traditional media, such as TV, radio, magazines and newspapers, and digital media, such as news portals and social media, and were structured as multiple-choice answers. These questions aimed at the identification of overall media platforms that are used for accessing news as well as identification of differences in the obtention of global, regional (local) news to determine if regional (local) media continue to be an important source of daily and weekly news. The questionnaire was designed in Google Forms. The questions were analysed by applying the descriptive statistics method.

The participants of the study included 341 students and academic staff of Alberta College in Riga, which is located in Vidzeme. The participants of the study lived not only in Riga but also in other parts of the Vidzeme region. The participants of this study were selected using a snowball sampling method.

Research results

Although the overall number of participants amounted to 341 students and members of the academic staff, the data from only 333 questionnaires were considered for analysis because other samples were incomplete. The respondent's gender ratio was almost equal - 58% women and 42% men.

All participants could be grouped into four age categories: 1) age 18-25, who constituted 24.3%, 2) age 26-34, who formed almost 26%, 3) age 35-44, who included 25.5%; and 4) age 45+ (24.2%). Therefore, it can be concluded that all adult age groups were relatively equally represented in the survey.

The key results related to media use are as follows. First, the most frequently used news platforms are Internet platforms and social media, which are, on average, used by more than 86% of the respondents, and the second most typically used source of information is television, used by more than 50% of respondents. Nevertheless, another source of information that was used by one-third of the respondents was radio. All other sources of news are used noticeably less frequently – on average by 10% of the respondents (see Fig. 2).

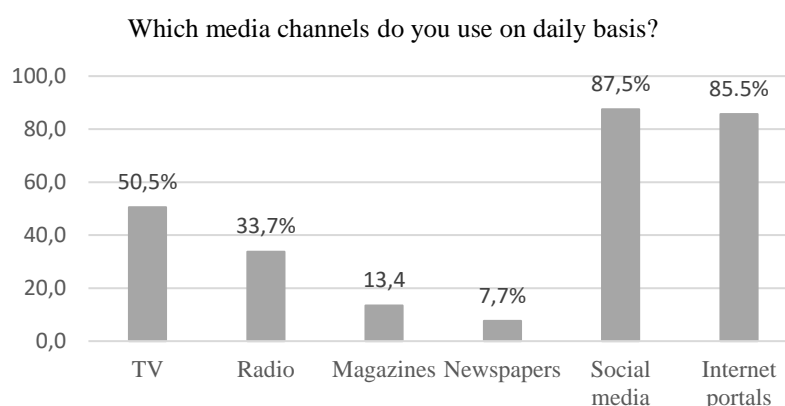


Fig. 2. Answers to the question “Which media channels do you use on a daily basis?” (Source: created by the authors)

The most frequently used media platform for obtaining news was social media (87,5%). The leader in this category was Facebook, which took 55% of the entire share of social media use, which was followed by Instagram with 21% of social media users. Other social media platforms were used significantly less often.

As for TV use (50,5%), a more detailed insight into the answers on TV use reveals that the frequency type of use was distributed almost evenly between the following types of use: daily, several times a week, rare and never. Interestingly, the age group of the youngest respondents (age 18-25) reported the rare or never use of TV. As for the TV channels watched, the leaders were the national TV stations - LTV1 and TV3, which were used by 41% and 27% of the respondents, respectively. Video streaming services were accessible to 63% of the respondents, while 38% did not use them.

The radio stations that were typically listened to include StarFM (19%), pieci.lv (19%), LR1 (15%), Radio SWH (11%), Radio Skonto (9%).

The answers to the question on the media sources that are typically used to obtain global news are provided in Figure 3, whereas answers to the same question pertaining to the regional (Vidzeme) scope are summarised in Figure 4.

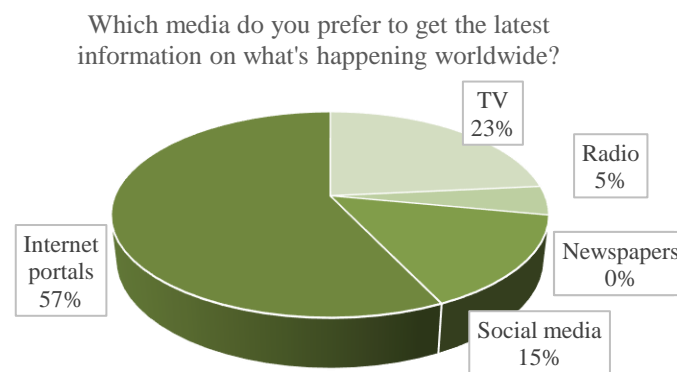


Fig.3. Answers to the question “Which media do you prefer to get the latest information on what is happening worldwide?” (Source: created by the authors)

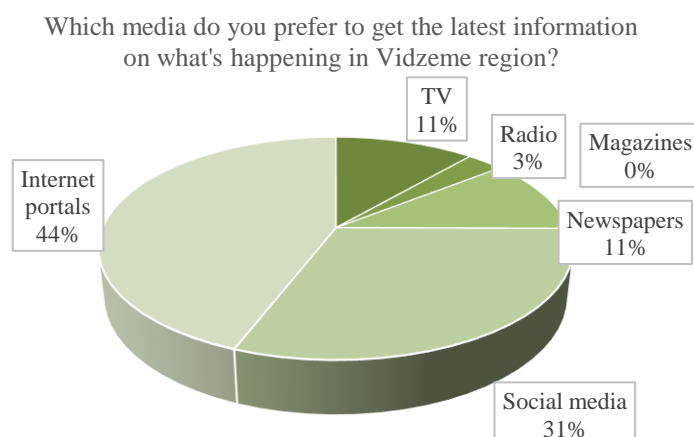


Fig.4. Answers to the question “Which media do you prefer to get the latest information on what is happening in the Vidzeme region?” (Source: created by the authors)

Both figures show that the vast majority of the respondents prefer to use the Internet for obtaining global and regional news, 57% and 44%, respectively. However, the frequency of use of other sources of information for obtaining global and regional news differs. The second most typically used channel for global news is TV (23%), while for regional news – social media (31%). In contrast, only 15% of the respondents use social media to gain access to global news. The percentage of use of other news sources might be considered insignificant for both cases, excluding magazines which are not used at all in both cases. This result is interesting because 56% of the respondents reported reading magazines but not for accessing news (see Fig. 5).

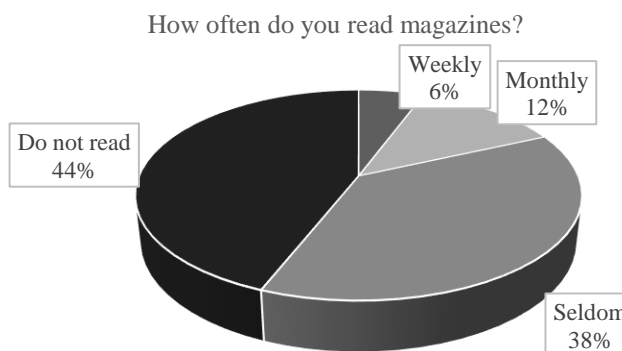


Fig. 5. Answers to the question “How often do you read magazines?” (Source: created by the authors)

The magazines that are typically read by the respondents range from the yellow press, such as Private Life (Privātā Dzīve) and What’s New? (Kas Jauns?), to serious magazines, such as the Economist.

Overall, the results of the study indicate that the most typically used media platforms for obtaining news include various Internet media and social media. The second most typically used source of media for the same purposes is television. The preferred channel for obtaining both global and regional news is the Internet, and not social media, which takes the third and second positions, respectively. Considering the wide use of social media overall, it can be concluded that social media is used not only for the purposes of obtaining news. This conclusion is supported by the findings on magazines, which were reported by almost half of the respondents to be used, but not as a source of news.

The key results related to media use are as follows. First, the media platforms that are typically used for obtaining news are the Internet platforms and, to a lesser extent, social media. This finding is consistent with the current view that the use of the Internet and social media has increased in volume (Priedola, 2020). The increased interest in online content might be related to the technological advances of such platforms. Another contributing factor to the increased use of online content relates to the personalisation of online content, which is implemented by major web corporations (Reveillac & Morselli, 2020). Such personalisation of the content leads to an abundance of online information, which in turn, leads to wide gaps in knowledge and negative effects on the creation of political knowledge (De Zuniga et al., 2017), which is a frequent target of fake news.

According to Eurobarometer data, social media platforms in Latvia are used more frequently than in the EU (Media & News Survey, 2022). However, the number of people who use social media for obtaining news is significantly below the overall level of social media use. It is difficult to interpret this finding because it might point to different reasons, such as the lack of overall interest in news, the decision to use news portals for news purposes, decision to use social media for other types of information. This topic needs to be addressed in future research.

Another finding of this research relates to the quite average use of TV as a news source and the fact that only two Latvian channels are in somewhat frequent use. It might be explained by the dominant online platforms on which both the TV and other types of content could be accessed at any time. This finding,

however, contradicts earlier research outcomes on the use of TV for political news in other countries. For example, in the USA, TV news continues to be an important source of political information for the population (Robinson et al., 2018). This difference between the current research findings and earlier research outcomes might be attributed to the earlier period in history as well as the Covid-19 pandemic, which gave an impetus to the overall digitalisation of all types of processes across the globe.

Conclusions

The key findings of this research are as follows. Overall, the population of the Vidzeme region mostly uses online platforms for obtaining both global and regional (local) news, especially online news portals and, to a lesser extent – social media platforms. This means that both national and regional governments should invest more resources into the development of both national and regional online news portals that will be verified for the reliability and accuracy of the provided information. Furthermore, the findings suggest that measures aiming at decreasing the negative impact of fake news should relate to the identification of fake information on online news portals as well as education of the public on the importance of the use of verified sources of information. Overall, this will reduce the impact of fake news on the formation of opinions of the inhabitants of this region.

The fact that social media are typically not used for obtaining global news suggests that the regional population of Vidzeme is not affected by the news content of social media produced in other countries. Therefore, it might be reasonable to invest in the education of the Vidzeme public on how and why to use reliable digital sources of news, such as BBC or CNN news portals. However, the fact that almost one-third of the regional population uses social media to obtain regional (local) news suggests that local political and educational institutions, as well as business organisations, should continue to develop their social media sites for news and monitor those of others.

Although half of the respondents acknowledged the use of television, a significantly smaller fraction used it for obtaining global and local news. Therefore, the impact of news produced by TV on the population of the Vidzeme region is quite limited, which stirs the need for discussion of the future of TV for the purposes of news delivery.

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E-COMMERCE AS A REVENUE GENERATOR FOR SMALL AND MEDIUM COMPANIES IN DEVELOPING COUNTRIES

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Abstract

Research purpose. The subject of this paper is the role of e-commerce for companies in increasing their competitive advantage in the market during and after the pandemic. The paper monitors the digital transformation and e-commerce implementations in a developing country (North Macedonia) and whether this can lead to a better position in the market.

Design / Methodology / Approach. The design of the research contained both a literature review from relevant secondary sources, as well as primary research through empirical analysis. The empirical analysis was performed through a survey questionnaire containing 28 questions of open and closed nature, including a five-point Likert Scale. The data was subject to quantitative and qualitative analysis and presented in the paper.

Findings. E-commerce has been seen as the future of shopping; however, due to the pandemic, the adoption rates increased significantly in the past two years. Primary data from the research shows that consumers in developing countries are open to online shopping, with satisfied trust and security parameters. The research implies that companies can safely implement e-commerce by following several important aspects to ensure customer interest in converting to their e-stores.

Originality / Value / Practical implications. The paper contributes to the e-commerce research field by providing newer data after a global situation-changer, such as the pandemic. The research data can be utilized to compare statistics and generate trends for developing countries in further research, as well as broader usage for customer preferences from other academics and the business sector.

Keywords: e-commerce models; developing countries; online shopping; e-store.

JEL codes: L81.

Introduction

The rapid development of digital and telecommunication technologies directly affects the daily lives of people and companies. We live in a digital age where using the Internet is an everyday thing. In the global market, business operations cannot be successful without using modern information technologies. The Internet has completely changed the way business is done by breaking down geographical and language barriers. The newest data shows that there are 4.95 billion internet users in 2022 (62.5% of the population), with a year-on-year change of 4%, meaning +192 million new Internet users comparing 2022 to 2021 (Datareportal, 2022). Internet technologies enable simple and fast communication, the transfer of a large amount of data over a long distance, and direct payment via the Internet, among many others (Blank & Lutz, 2018). E-commerce appears as a consequence of the development of information

and communication technologies, so one of the oldest activities in the world gets its place in the digital world.

E-commerce is considered the most profitable form of commerce due to its simplicity and low costs (Scarpi & Riley, 2006). E-commerce has been expanded in various industries, differentiating between traditional and non-traditional applications (Boyd & Bilegan, 2003). However, thanks to new technologies, the wishes, and needs of consumers come to the fore more easily than ever, and thus their demands and expectations have increased. Digital technologies utilized in e-commerce have increased adoption during the pandemic, rising from 35% in December 2019 to 55% in July 2020 (Soava et al., 2022). E-commerce is experiencing rapid development where, in addition to large corporations, small companies recognize its advantages (UNECE, 2022). Research shows spikes in e-commerce transactions between March 2020 and August 2020 in the United States, China, Japan, and EU Member states, participating up to 25% of total sales, compared to 15-17% before the pandemic (Alfonso et al., 2021). The advantages it offers are numerous, both for companies and for consumers, which leads to a constant increase in competition in the market. Research on the topic shows increased benefits and participation of e-commerce sales in total SME sales and is viewed as a driving factor in influencing growth (Kumar & Singh, 2021; Ha, 2020; Alderete, 2019).

The main hypothesis of this paper is - If companies use E-commerce in doing business, then they will increase their competitive advantage in the market. Research questions that we will answer below in the paper are:

- Do you monitor information on promotional prices, discounts, price promotions, etc., on a daily basis through online stores?
- Does the degree of digitalization, that is, the degree of transformation of trade into digital, affect the process of production, distribution, and sale of the product and service?
- Do the disadvantages of using e-commerce make it difficult for the market to function?

The paper aims to present trends for developing countries in e-commerce adoption, focusing on North Macedonia, researching and comparing available data, as well as consumer perspectives on the status and future of e-commerce transactions. The paper shows the growing presence of e-shoppers in developing countries, along with the benefits and barriers they face when utilizing new digital technologies to make purchases.

Literature Review

The terms e-business and e-commerce can often be intertwined, especially in the era of digital transformation. They are not synonyms; e-business is a more general term and refers to the use of information and communication technologies to support all business activities and transactions within the company (Galli, 2021), while an e-business model specifies how the company will utilize the technology to generate revenue (Brzozowska & Bubel, 2015; Ukaj et al., 2020). On the other hand, e-commerce is a subset of e-business. E-commerce is a concept that goes beyond just online shopping; it is a holistic strategy for redefining existing business models through technology in order to benefit consumers and companies to maximize profits (Bhat et al., 2016). Interest in the topics of e-business and e-commerce for the authors began in 1998, following a peak rise in 2011-2013 (Chen & Holsapple, 2013). E-commerce means better business communication and information exchange, which is essential for every company. The introduction of e-commerce in the company's work can offer better business solutions, facilitating decision-making, better pricing, more accurate sales forecasting, as well as other important information for the efficient execution of business activities (Jain et al., 2021). Characteristics of e-commerce technology are as follows:

- *Ubiquity* - Internet technology is available anytime and anywhere, at work, at home, or elsewhere through mobile devices. The market has been expanded beyond traditional borders, and geographical and time barriers have been removed. The purchase can be made from anywhere and at any time (Stanford, 2000);

- *Global reach* - The scope of the technology reaches across national borders all over the world. Trade across national and cultural barriers is enabled, and the potential market is billions of consumers and millions of businesses worldwide (Lai et al., 2017);
- *Universal standards* - There is one set of technology standards or internet standards around the world. Universal standards enable compatibility and integration on a global level;
- *Wealth of information* - The quantity and quality of information in e-commerce are growing exponentially. The flow of information is increasing, and a quick and simple presentation of products to consumers is possible (UNCTAD, 2019);
- *Interactivity* - Consumers are involved in communication that dynamically changes the experience of the individual and makes the consumer complicit in the entire process;
- *Personalization* - Technology allows the delivery of personalized messages, products, and services to individuals and groups. Personalizing marketing messages and customization of products and services are based on individual characteristics, interests, and desires (Fatta et al., 2016).

The advantages of e-commerce for consumers, businesses, and society can include (Turban et al., 2015):

- E-commerce allows some products to be sold at the lowest prices, so people can buy more and increase their standard of living;
- E-commerce enables less use of means of transport for shopping, which results in less road traffic and less air pollution, as well as convenience during the recent lockdown procedures;
- Enables people in third-world countries and rural areas to use products and services not otherwise available to them;
- E-commerce facilitates the availability of public services, such as healthcare, education, and social services, with reduced costs and/or better quality;
- E-commerce helps people to download music, videos, and video games and view the latest news from all fields. They can also book tickets for theaters, cinemas, sports matches, etc., via the Internet;
- E-commerce bridges the gap between job seekers and employers in society.

Various authors have researched the benefits of the digitalization of processes (Graupner et al., 2021; Gera et al., 2021), showing that e-commerce and m-commerce are growing as additional revenue streams for companies. The accelerated growth trend of e-commerce during the pandemic is very likely to be maintained during the recovery from the consequences. The adoption rates vary by enterprise, with an average level of 12% for the whole European Union, with Montenegro being the high point with 33% accelerated adoption of e-commerce (Eurostat, 2021). It must be noted that the adoption rate is directly dependent on the level of penetration of e-commerce in the specific country (Raza & Khan, 2022; Oktora et al., 2020; Bravo et al., 2022; Hossain et al., 2021). The benefits of this trend will depend on the digital readiness and preparedness of the countries as well as the enabling conditions for e-commerce. In fact, the companies that best handled the crisis were highly prepared and supported by appropriate and sound e-commerce strategies. Economies with high levels of internet coverage, consistent e-commerce strategies, and economies that prioritize e-commerce development through coordinated activities stand to gain the most during the COVID-19 crisis. In terms of companies, those with a long-standing presence on the Internet, traditional businesses with sufficient funds to invest in upgrading their business to e-commerce, communication networks, and digital platforms, and companies that overcome the problems of transport logistics have coped best with the crisis.

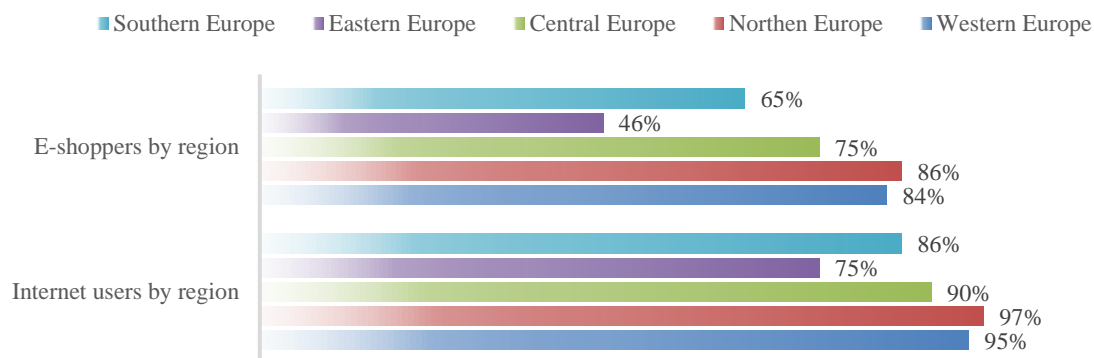


Fig. 1. E-commerce penetration (Source: EuroCommerce, 2022)

Figure 1 demonstrates that e-commerce penetration is evident across all of Europe, with the biggest percentage of e-shoppers being in Northern Europe (86%), Western Europe (84%), and Central Europe (75%). There is also a positive correlation between Internet penetration and E-commerce penetration. The frequency of online purchases in 2021 (Statista, 2022, same link) shows that most consumers buy between 1 to 2 times per week, or 3 to 5 times per week, with 6 times or more e-commerce purchases being the rarest. The percentage of e-shoppers before the pandemic rose yearly between 1-2% (2017-2019), while between 2019 and 2020, it jumped over 8% in just 2 years (4% per annual growth). E-commerce is changing many aspects of business and social life. Companies need to adapt their strategies to the new reality after the COVID-19 pandemic if they want to stay competitive in the market. Successful introduction of e-commerce in business operations is a slow process and cannot be completed all at once but in smaller series of adoption processes in which the company moves gradually from a simple to more complex stages of e-commerce (Hassan, 2008). Any company that begins the process of introducing e-commerce will face certain problems and obstacles, but company managers should overcome them and realize the benefits of e-commerce (Abdelrhim & Adbullah, 2020). E-commerce has great prospects for further accelerated development and to be an indispensable part of the trade process in the future.

Research methodology

To research the main hypothesis of this paper - If companies use E-commerce in doing business, then they will increase their competitive advantage in the market, three different research questions were developed, including monitoring information on prices in online stores, the influence of the degree of digitalization/digital transformation on marketing activities and disadvantages of e-commerce transactions.

To answer the research questions, primary research was done on the territory of North Macedonia via a survey questionnaire. The survey questionnaire is on a representative sample of 86 respondents, anonymous and without demographic restrictions. The questionnaire was created electronically through Google Forms and delivered to the respondents through e-mail, social networks, and mobile applications for communication. It consists of 28 questions of open and closed nature, including general demographic questions, questions with single and multiple answers, and determining the degree of agreement with certain statements according to the Likert scale for measuring and presenting relevant data. The survey was conducted June-July 2022 for 14 days. The data from the survey questionnaire will be presented below through graphic displays.

Research results

In the survey, 65.1% of respondents are female, while 34.9% are male, with the largest age group being 36-45 year-olds (47.7%), followed by 26-35 year-olds (38.4%) and 46-55 year-olds (8.1%). Respondents use the Internet at least once a day (97.7%), and a considerable percentage shop online (91.9%). From respondents who do not do online shopping, the majority have cited that they like to view the product in a physical store (42.9%), as well as security and privacy issues (14.2%).

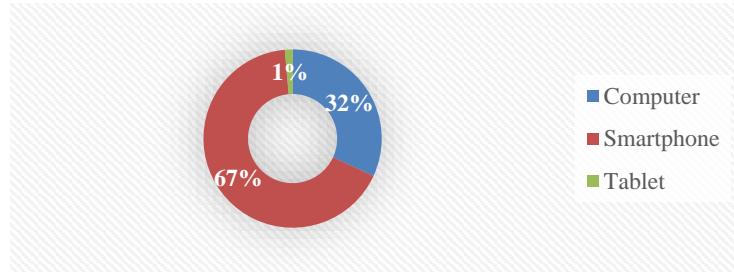


Fig. 2. Online shopping via device (Source: Own research, 2022)

According to Figure 2, the largest number of respondents make online purchases with a mobile phone, 66.7%. A computer is used by 31.9% and a tablet by 1.4%. It can be concluded that m-commerce is also present in large numbers among consumers in North Macedonia is in line with the global trend of increasing m-commerce. Based on the data, most respondents shop from either home or foreign companies (69%).

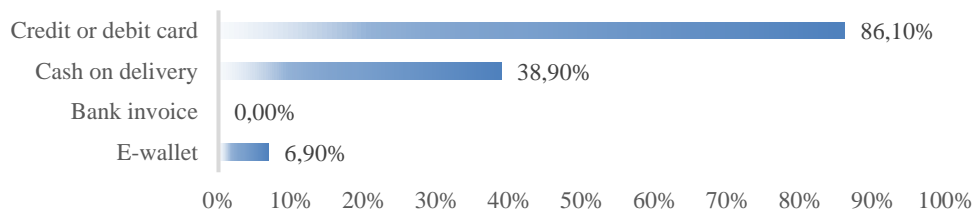


Fig. 3. Online shopping payment methods (Source: Own research, 2022)

Figure 3 shows that the majority of respondents make the payment with a credit or debit card, 86.1%. 38.9% use cash when placing an order, and 6.9% use an electronic wallet. Respondents generally have the trust and confidence to shop via credit/debit card (83.3%), and only a very small percentage have experienced fraud when shopping online – 13.9% in home e-commerce platforms and 20% in foreign e-commerce platforms.

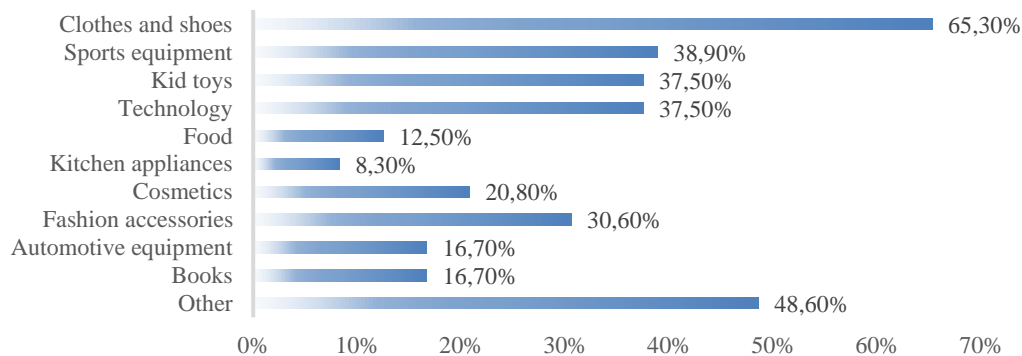


Fig. 4. E-commerce categories (Source: Own research, 2022)

From Figure 4, it is visible that the respondents buy a variety of products online. The obtained results say that the most frequently purchased products are clothes and shoes 65.3%. Products that are also often bought are sports equipment 38.9%, children's equipment and toys 37.5%, technology products 37.5%, and fashion accessories 30.6%. The received answers indicate that fewer Macedonian consumers buy food online 12.5% and kitchen appliances and white goods 8.3%. Respondents state that they do not follow price changes on an everyday level (59.2%), but the majority shop in e-commerce stores that offer discounts (86.1%) and utilize promotions and sales (85.7%), leading to the majority agreeing that through online shopping they can find cheaper products or services (80.6%).

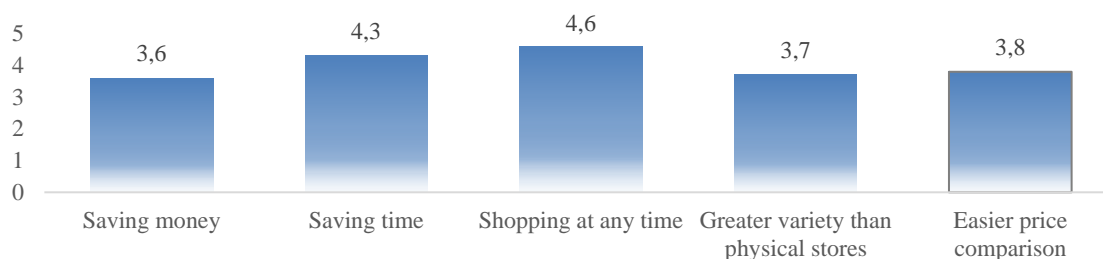


Fig. 5. Reasons for online shopping (Source: Own research, 2022)

Figure 5 on the previous page analyzes the attitudes of respondents about the reasons for which they buy online. This question is formulated from five statements in the form of a Likert scale, according to which the degree of agreement with the statements can be determined with a rating from 1 to 5 (1 - I do not agree at all..... 5 - I completely agree). Through the calculation of the weighted arithmetic mean, according to the Likert scale, the average ratings for each of the stated claims were obtained. The average score for the possibility of easier price comparison than in physical stores is 3.8, which means that the respondents mostly agree with the statement; however, it is a less important reason for shopping online. The average rating for Greater selection than in physical stores of 3.7 also indicates a less important reason for shopping online. As the most important reason for shopping online, respondents cited the possibility of shopping at any time, with an average rating of 4.6. Saving time, with an average rating of 4.3, is also a very important reason for shopping online for respondents. From the stated claims about the reasons for shopping online, the least important reason for the respondents is Saving money, with an average rating of 3.6.

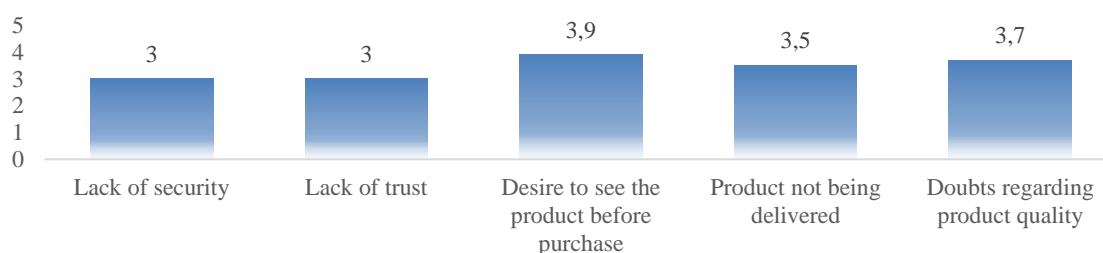


Fig. 6. Potential drawbacks of online shopping (Source: created by the author, 2022)

Figure 6 analyzes the attitudes of respondents about the reasons that dissuade them from buying online. This question, like the previous one, is formulated from five statements in the form of a Likert scale, according to which the degree of agreement with the statements can be determined with a rating from 1 to 5 (1 - I do not agree at all..... 5 - I completely agree). From the results shown, it is obvious that the respondents, in terms of trust and security, where the average rating is 3 for both claims, have a neutral attitude; that is, trust and security do not represent reasons that distract them from online shopping. According to the average rating of 3.9 for the statement Desire to see the product before buying, it can be concluded that this lack of e-commerce is the most crucial factor that pulls the respondents to buy

more online. The possibility that the product will not be delivered or that the delivery will be late is not highlighted by the respondents as a potential reason for distraction from online shopping, with an average rating of 3.5. Doubt in the quality of the product, with an average rating of 3.7, shows that this lack has an influence on the respondents' decision to buy online, but it is not a key factor.

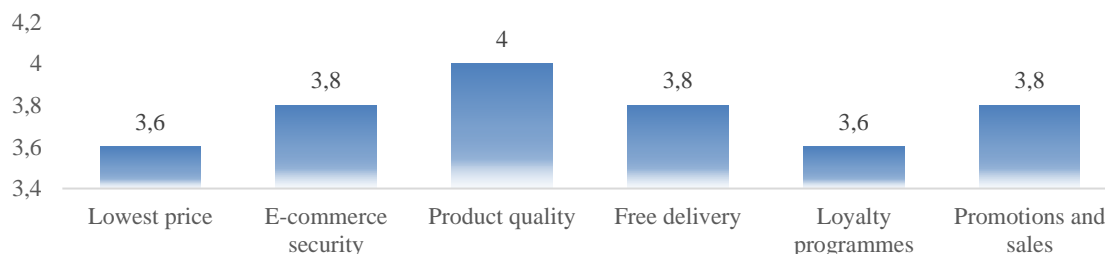


Fig. 7. Reasons to choose an e-commerce store (Source: Own research, 2022)

Figure 7 analyzes the respondents' views on the reasons why they choose to buy from a certain e-store. Through the calculation of the weighted arithmetic mean, according to the Likert scale, the average ratings for each of the stated claims were obtained. The average rating for Lowest Price and Loyalty Program of 3.6 means that these reasons are important to respondents but are not of primary importance when choosing an e-store to buy from. Promotional benefits, Free shipping, and Security of the e-store are rated with an average rating of 3.8, and Product quality with 3.9. From the results, it can be concluded that all of the stated reasons for choosing the e-store are important to the surveyed consumers; however, the Quality of the products is highlighted as the most important reason.

An increasing number of consumers decide to buy online from domestic e-stores, and more and more new e-stores appear on the market, which realizes the benefits of this type of trade and increases the choice for consumers. Fast and accessible fixed and mobile internet, the use of internet technology in everyday life, the growing trust of consumers in domestic e-commerce (which was not the case in past years), and the realization of all the benefits contribute to the growing development. Consumption of e-commerce in our country is much lower compared to developed countries; however, considering the degree of economic development and the standard of citizens, it is at a satisfactory level with the possibility of improvement in the future. The research allows us to address the main hypothesis and the relevant questions that arise.

The answer to the first research question, “Do you follow information about promotional prices, discounts, price promotions, etc., on a daily basis through online stores?” is derived from consumer survey research. The responses from the survey show that the majority of the respondents, 59.2%, do not follow the daily price policies through e-stores. The e-stores visited by 86.1% of the respondents offer promotions and price lists, and most of the respondents, 85.7%, use the promotions, discounts, and other benefits offered by the e-stores. This is higher than similar research in developing countries, where the weighted average was moving between 53-70% among respondents (Infanta & Sundharam, 2021). Compared to other developing countries in the region, data from Serbia shows similar levels of engagement within a 10% of margin difference in each area (MASIT, 2021). From the above, it can be answered that consumers through online stores do not follow the information on promotional prices, discounts, price actions, etc., on a daily basis. Consumers are informed about promotional prices, discounts, price promotions, etc., from e-stores as needed before making a purchase.

The answer to the second research question, “Does the degree of digitalization, that is, the degree of transformation of trade into digital, affect the process of production, distribution, and sale of the product and service?” provides research with a survey questionnaire for consumers and researchers in companies that have introduced e-commerce in their operations. Among the surveyed consumers who have access to the Internet and use it every day, 97.7% of them and 91.9% buy online. The largest number of respondents, 37.5%, buy online several times a year, followed by those who buy several times a month with 26.4%. Most of the time, 66.7% of respondents make online purchases through their mobile phones, while 31.9% use a computer. Modern technologies are widely available to consumers, and they use them to a great extent. E-commerce is accepted by most of the consumers; they buy much more compared to

the past. Most of them use their smartphone to shop online, which is in line with modern trends where m-commerce is constantly growing. When shopping online, consumers mostly pay with a credit or debit card 86.1%, while 38.9% use cash when receiving the order. 83.3% of consumers trust to pay by card when shopping online. These data indicate the increasing use of payment cards for online purchases and the increased confidence in the security of their use, in line with other work on factors that are limiting online shopping, where fear and trust are the top-ranking factors (Daroch et al., 2021). Of the surveyed consumers, only 13.9% faced fraud from Macedonian e-stores and 20% with fraud from foreign e-stores. The small number of consumers who have faced fraud from e-stores speaks of their safety and security. We are witnessing the evolution of the traditional supply chain, where its barriers are being broken down through digitalization. Marketing, product development, manufacturing, distribution, and delivery to the consumer are largely separate and distinct stages in the supply chain. The growing degree of digitization of these stages contributes to their greater integration in order to fulfill the demands of consumers. The development of e-commerce has an important role and dramatically influences the processes of digitization of the supply chain. Digital transformation is a cultural, organizational, and operational change in a company through the integration of digital technologies, processes, and skills in a strategic way. From the above, it can be answered that the degree of digitalization, that is, the degree of transformation of trade into digital, affects the process of production, distribution, and sale of the product and service.

The answer to the fourth research question, “Do the disadvantages of using e-commerce make it difficult for the market to function?” provides research with a survey questionnaire for consumers. The results of the survey questionnaire, in terms of the disadvantages of e-commerce, say that they do not greatly influence consumers to buy online. They trust e-commerce and feel safe and secure when shopping online. The only drawback that is highlighted by consumers and that somewhat distracts them from online shopping is the desire to see the product before buying it, which is part of the 16 drivers of behavior outlined by Zerbini et al. (2022). If the results obtained by consumers on the advantages of e-commerce and the results on the disadvantages of e-commerce are compared, it can be determined that the advantages offered by e-commerce are far greater than the disadvantages. The disadvantages of e-commerce have little influence on the decision to buy online. This is confirmed by the large percentage of respondents who use e-commerce. From the above, it can be answered that the disadvantages of using e-commerce do not hinder the functioning of the market.

Conclusions

E-commerce, as the most popular form of commerce in the world, has seen a continuous growth trend in recent years at the global level. Highly developed countries with greater experience and tradition in e-commerce, where it is stimulated and promoted, record very high growth rates in revenues from this area compared to countries that lag behind in the development and support of e-commerce. The number of e-stores emerging is on a steady growth trend as companies become aware of the power of e-commerce. The introduction of e-commerce among companies is not only necessary for the purpose of raising a competitive advantage, but it is also essential for their survival in the modern business environment. The competition in the e-market is getting bigger and stronger. E-stores must implement appropriate business and marketing strategies in order to stand out from the competition and better position themselves among consumers.

The modern consumer is informed and has ever-increasing expectations and demands. E-stores do not threaten physical stores because most consumers want to see the product before buying it. The combination of physical and e-stores seems to be an ideal combination for success in the market. By managing both types of business well, the company can achieve significantly better results. Through the analysis of the responses from the survey questionnaire, it was determined that e-commerce in North Macedonia follows modern global trends. The results show that a vast number of respondents buy online. Also, the research shows that the respondents do not buy online every day, but when necessary and usually several times a year, and they mostly use their mobile phones for shopping. The research found that the modern consumer is not afraid and has the confidence to pay with a card online. The research shows that Macedonian e-stores are reliable and safe, and a large number of consumers trust

and buy from them. The research showed that e-commerce in developing countries has an excellent perspective for the future and a great space for progress and improvement. Research can be expanded to follow companies that have introduced e-commerce in their activities regarding the benefits and drawbacks it offers through interviews and case studies, as well as expand the consumer survey in other developing countries.

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ASSESSMENT OF THE IMPACT OF COVID-19 PANDEMIC ON THE SERVICE SECTOR IN LITHUANIA

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Abstract

Research purpose. This study aims to assess the impact of selected economic indicators (independent variables) on the turnover of food and beverage service companies in Lithuania.

Design / Methodology / Approach. In order to achieve the intended goal of the study, an analysis of scientific articles was performed, with the primary aim of finding out the consequences of the COVID - 19 pandemic on the Lithuanian economy and selecting five independent variables that could affect the turnover of food and beverage companies. After analysing the literature, five independent variables were highlighted: the number of tourists accommodated, the statistics of Vilnius Airport flights, the number of employees hired, the unemployment rate and inflation.

Findings. The correlation and regression analysis results show that the turnover of catering and beverage enterprises and the number of accommodated tourists are strongly correlated ($r > 0.90$). Meanwhile, the linear correlation between the number of Vilnius Airport flights and the number of hired employees with the research variable is average ($0.60 < r < 0.70$). However, the linear correlation of macroeconomic factors such as unemployment and inflation with the turnover of food and beverage enterprises is statistically insignificant.

Originality / Value / Practical implications. The originality of this article is that it studies the valuable topic of the COVID-19 crisis in service sectors, which substantially impacted Lithuania's economy and adversely affected the economic performance of the region in general. The results of this research will contribute to future monitoring and crisis planning in particular sectors.

Keywords: COVID-19 impact; service sector; economic impact; tourism.

JEL codes: M15; M21.

Introduction

The fast-spreading coronavirus, which was initially discovered in Wuhan, China, at the beginning of 2020, struck the whole world. The virus quickly spread around the world. On February 28, 2020, it was determined that Lithuania had its first verified case. As time has passed, the virus has spread over the world, and Lithuania has become one of several nations that have declared a state-wide quarantine. The quarantine, limits on contact activities, and restrictions on enterprises that have been imposed as a result of this virus have had a substantial impact on the economy of Lithuania and have had an adverse effect on the economic performance of the region. During this time period, a lot of people's lives have been turned upside down; some of them have been fired off from their positions, while others have begun working from home. The limits imposed by quarantine have had an effect on the commercial sector. Various measures, including as sectoral lockdowns, school closures, and restrictions for specified age groups, were implemented to limit the spread of the disease after the first case was reported.

In addition, fears of infection led to a decline in consumption demand in some sectors, particularly the service industry (Aldan et al., 2021). On the other hand, individuals have started putting away some of

their discretionary money or, alternatively, investing it. People's spending, and frequently their incomes, have dramatically decreased as a result of the restricted options that are available during a pandemic. All economies worldwide have suffered as a result of the quarantine and suspension of non-essential activity used to control the COVID-19 epidemic. Small and medium-sized enterprises (SMEs) in developing countries have been particularly impacted because of their low resources, weak supply chains, and weak business-to-business and business-to-client connections (Caballero-Morales, 2021).

The analysis of (Menezes et al., 2022) demonstrates that the effects of COVID-19 are distinct from those of prior crises, such as the global financial crisis and the recession of 2014. The COVID-19 pandemic is best seen as having an impact comparable to that of a natural disaster, with supply interruptions leading to income declines, which ultimately contribute to lower aggregate demand. Clearly, the lockdowns have had an increasingly significant effect on commercial activity such as retail and services. Contrarily, the global financial crisis (and recessions more generally) is linked to a decline in total demand, which is reflected in industrial activity. The COVID-19 pandemic has had a devastating effect on the worldwide economy, as well as on the tourist sector. The findings of (Pham et al., 2021a) indicate that the pandemic impacts a variety of sectors and professions outside the tourist industry. The authors recommend that the government has to provide robust assistance for the tourist industry, as its recovery may have positive effects on other industries and the whole range of jobs in the labour market. The effect of the COVID-19 epidemic on the travel and tourist industry has been devastating. Due to the significance of tourism in rising economies and the uniqueness of their infrastructures and healthcare systems, tourist sites in developing nations are much more vulnerable to unfavourable trends (Cambra-Fierro et al., 2022)

During the recession, offline micro businesses (OMB) activity in China dropped immediately and dramatically by 50 per cent. Seven weeks following the COVID-19 outbreak, the businesses had recovered to around 80 per cent of their pre-outbreak levels and maintained at this level until the end of our time frame (Guo et al., 2022). The findings by (Uddin et al., 2022) reveal a significant, positive correlation between the analysed markets and the COVID-19 epidemic.

Due to contagion and other markets' spillover effects, market efficiency, diversification advantages, and hedging were questioned. Further study is required to analyse and reduce the effects of market correlation and investor irrationality, which may contribute to such financial contagion (Iyer & Simkins, 2022).

Both the economy of Lithuania and the economies of the rest of the world were significantly impacted. The purpose of this study is to investigate the effects that the worldwide spread of the coronavirus pandemic has on the economic indicators of Lithuanian companies that operate in the food and beverage sector. The situation in Lithuania during the epidemic will be analysed using both a theoretical examination of the scientific literature and a practical investigation of the economic data. The research problem that was established for this investigation referred to the economic effects of the COVID - 19 pandemic shock. An economic indicator known as "Turnover of Food and Beverage Service Enterprises" will serve as the primary focus of this investigation. The rate, which defines the change of indicator of the service sector, will be a reflection of the impact that the coronavirus has had on the economy of Lithuania.

Literature review

As the topic of the COVID-19 pandemic touched extensive areas of economic sectors, so it is natural that there is plenty of research regarding this theme (Christophe et al., 2022; Hokama et al., 2022; Nurmohamed et al., 2022; Pinchera et al., 2022; Schmidt et al., 2022; Su et al., 2022; Wang et al., 2022). Lots of these researches are investigating the impact of COVID-19 on the economy (Atsız & Cifci, 2021; Hyman et al., 2021; Keogh-Brown et al., 2020; Malik et al., 2022; Pham et al., 2021b); others are making the prognoses (Atsız & Cifci, 2021; Hyman et al., 2021; Keogh-Brown et al., 2020; Malik et al., 2022; Pham et al., 2021b) or giving recommendations (Atsız & Cifci, 2021; Hyman et al., 2021; Keogh-Brown et al., 2020; Malik et al., 2022; Pham et al., 2021b), and only some of these scientific publications are dedicating the research about the impact of COVID -19 on a food and beverage service enterprises

(Atsız & Cifci, 2021; Hyman et al., 2021; Keogh-Brown et al., 2020; Malik et al., 2022; Pham et al., 2021b) In order to conduct an analysis of the mass of published work, a selection of research and scholarly publications on the state of the situation in Europe, Canada, the United States, and Malaysia during the epidemic have been chosen. As the COVID - 19 pandemic is a worldwide issue, the preventative plans and procedures of the various nations are more or less similar. The most common approaches for preventing the spread of COVID - 19 were movement and mobility limitations, purification, and quarantine. Consequently, the food and beverage industry was one of the industries most impacted by the COVID - 19 epidemic. During the pandemic, the service industry had a particularly severe economic blow, both in Lithuania and globally. Due to the consequences of the COVID - 19 pandemic, individuals and government prohibitions have avoided human interaction. Consequently, the service sector has sustained enormous losses, as the vast majority of its activities relied on face-to-face communications. This study examines the influence of the COVID - 19 pandemic indicators on the activities of restaurants and cafés, which will be represented as an economic indicator in this empirical study. Several prospective indicators are examined scientifically in the following subsections in order to evaluate the relationship between the turnover of food and beverage service businesses and those indicators. The purpose of the further literature review that will be conducted on each specific economic factor relating to the COVID-19 pandemic is to conduct an analysis of the core factors that the researchers see as being the most significant. Readers would have a better understanding of the current state of the art in the sphere.

The situation of the labour market in relation to the COVID–19 epidemic

The epidemic impacts almost every element of economic activity, but labour markets are particularly vulnerable. Activities associated with the labour market, such as physical contact at the job, commuting, and other activities, directly contribute to the spread of the illness. Moreover, the pandemic might disrupt the current labour market systems and alter the wage and unemployment patterns (Kopicki & Rupert, 2022).

Researchers (Svabova et al., 2020) conducted a study of the unemployment rate in different sectors of the Slovakian economy. The months of November 2019 through October 2020's monthly statistics were analysed. The analysis suggests that the COVID-19 shock had the most significant effect on the accommodation and food service industries, as well as the leisure and entertainment industries. In April 2020, the unemployment rate in Slovakia was 8%, up 30% from the previous month (6.2 per cent). Comparing April 2020 to March 2020, the number of job searchers in Slovakia's accommodation and food service industry doubled in April. In order to mitigate the negative impacts of the demand and supply shock brought on by COVID - 19, the government of Slovakia has decided to become involved in the economy of the nation by providing assistance to both businesses and the general public.

When comparing the joblessness rates in Lithuania throughout the same time period, from November 2019 to October 2020, there are some remarkable similarities to be found. Even though the quarantine had already been raised by this point, the rate of unemployment in Lithuania began to climb during this time period. The highest rate of unemployment (15-74 years) after seasonal adjustment was 9.9 per cent in September 2020, even though the quarantine had already been lifted by that point.

The implementation of a national quarantine on March 16, 2020, had a substantial influence on the labour market in Lithuania, as well as the delivery of food and beverage services to commercial enterprises. The association between the aforementioned signs may be detected by looking at the date when the quarantine started. At the end of the first quarantine, which took place on June 17, 2020, the percentage of people who were unable to work did not recover and stayed at over 9 per cent. However, the turnover rate of restaurant enterprises started to revert to the turnover rate it had before the pandemic. Restriction of contact activities has resulted in a decrease in the number of consumers attending restaurants, which, in fact, has had an impact on the labour market in the service industry.

Researchers (Dube et al., 2020) state that the restaurant and service sectors are significant sectors of the social economy but that these sectors are also very sensitive and are strongly influenced by a variety of global risks, such as the coronavirus. After analysing the data, the authors concluded that restaurants in the majority of nations have nearly completely lost all of the customers who are served locally. As a

direct consequence of this, the service industry experienced a significant drop in income, which in turn resulted in an extremely high rate of unemployment in catering facilities. According to the data gathered by the source, it can be shown that according to the statistics of March 18, 2020, the number of direct consumers of restaurants declined by around 90 per cent in the United States of America, Germany, Canada, Great Britain, Mexico, Australia, and Ireland. The majority of employees were laid off as a result of the COVID - 19 pandemic, which impacted the worldwide service industry.

Because there was such a high turnover rate in restaurants during the COVID - 19 epidemic, current employees were unable to be kept on, and there was not much preparation done for the recruitment of new employees. It is also widely known that servers and bartenders who work in businesses that provide food and beverage supply get a significant portion of their earnings from tips received by customers. There is no question that the limits that were enforced during the COVID - 19 epidemic affected the monthly turnover of food and beverage businesses. When looking at the months of February and April 2020, when the quarantine started, it is clear that the turnover rate of restaurant establishments has dropped by a three-fold amount. In light of these findings, it is reasonable to draw the conclusion that workers in the service industry, the majority of whose money comes from gratuities, have had a significant portion of their pay cut as a direct result of the reduction in the number of clients. Because of the current financial environment, firms have not only been forced to cut down the number of workers they employ but they have also been forced to reduce the pay of those who still were employed.

Inflation in the context of the COVID – 19 pandemic

The authors of the scholarly work (Erdogan et al., 2020) researched the reasons for an inflation in European countries from January 2020 to July 2020. Their findings were published in 2020. In the framework of COVID - 19, an examination of the factors that determine inflation was carried out using regression models. The most significant contributors to the recent increase in inflation have been identified as being exchange rates and the amount of money in circulation. Because the effects of the imbalances have been passed on to each other, regional cooperation is important for economic stability. However, this does not guarantee that it will prevent future shocks. The study has shown that macroeconomic imbalances have been identified in all countries and that the effects have been passed on to each other.

In the framework of COVID - 19, it is unavoidable for there to be either inflation or depreciation of money. As the country of Lithuania, like the majority of other nations, struggled to overcome the impact, additional money was added to the offer, and citizens were provided help. The majority of the funds came from member states of the European Union. The economic recovery will receive a total of 2,364.3 billion euros from the European Union. The purpose of this is to provide assistance to European nations in their struggle against the COVID-19 epidemic as well as the economic impact. As a result, higher inflation during the heat of COVID-19 is a natural economic component.

An article written by an American researcher (Shapiro, 2020) states that social distance has significantly decreased consumer expenses in industries where usually human interaction is present. There is a discussion of the restaurant and hotel industries. Shapiro and A.H. conducted research in which they analysed the COVID - 19 inflation in impacted industries throughout the United States for 18 months, beginning in January 2019 and ending in June 2020. The limits imposed by the government to slow the spread of the epidemic have impacted inflation in these areas. According to the findings, the drop in PCE inflation of 1 per cent from the prior threshold of 2 per cent results from falling consumer demand for goods and services.

As a result, it may get the following conclusion: the COVID - 19 sector that is most impacted by inflation has an effect that is counter to what it has on the economy as a whole. According to the data that was obtained, the rate of inflation in Lithuania began to climb noticeably during the second month, and it reached 1.4 per cent in September 2021. A jolt was given to the economy due to the rationale for such high inflation, which was an increase in the money supply to tackle COVID-19. On the other hand, diners and coffee drinkers spent less money at restaurants and cafes as a direct result of the tight limitations that were placed on them during the quarantine. Therefore, an increase in the money supply does not always result in inflation across the board. Since the turnover of Lithuanian catering enterprises

demonstrates that consumers spent less in this sector during the pandemic, inflation had to have very little effect on the operations of restaurants and cafes.

Decreased tourism due to mobility restrictions

Researchers (Wasiul et al., 2020) revealed that as a result of the COVID - 19 pandemic, the government of Malaysia enacted a Movement Control Order (MCO) at the beginning of 2020 in an effort to stop the virus from spreading further. The order's purpose was to cut down on flights to Malaysia, which had a negative impact on the hospitality and food service industries in the region. Also, prior to the outbreak of the pandemic in the year 2020, the tourist industry in Malaysia was recognised as one of the most productive and rapidly expanding industries on a worldwide scale.

The COVID-19 epidemic has been a significant source of economic stress for a number of nations, including Malaysia and Spain, both of which depend on a sizable percentage of their GDP from tourism and other service-based industries. It is reasonable to suppose that the economy of Lithuania and the revenue of catering companies have suffered less than they have in Malaysia or Spain due to the fact that the tourist industry in Lithuania is not as established as it is in Malaysia or Spain.

These researchers (Ozili & Arun, 2020) have written a scholarly article discussing how the global health crisis has evolved into a worldwide economic crisis. As a direct consequence of this, industries and the companies within them that depend heavily on regular interaction with humans have been obliged to either shut down or alter the ways in which they conduct their operations. In order to stop the epidemic from spreading further, the worldwide tourist sector has suffered a loss of \$200 billion. During the outbreak, the hospitality and food service industries had a major economic setback due to fewer tourists and more stringent movement restrictions. The most severe impact was seen by small enterprises operating in the service industry, the majority of which were unable to continue operating normally as a result. In addition to this, an experimental investigation was carried out, with data spanning from March 23, 2020, to April 23, 2020. According to the findings of the research, the duration of the quarantine had a considerable and detrimental effect on the pricing of stocks as well as the economy as a whole.

As a result, there have been limits placed on people's ability to move about in several countries, including Lithuania. Statistics on airline traffic and the number of visitors visiting each country have been significantly influenced by international travelling. According to the scientific studies that were reviewed and analysed on the subject of travel and mobility constraints brought on by the COVID-19 pandemic, the pandemic had a substantial effect on two indicators that were relevant to the subject—statistics on both the number of tourists and flights.

When the findings of the literature review on the existing situation due to the effect of some economic variables on the turnover of food and beverage service businesses in the context of the COVID-19 pandemic are summed up, it is evident that some of the variables that were selected made a significant impact, including inflation, the number of tourists, the number of flights, the number of employees hired, and the unemployment rate. The COVID - 19 pandemic has had a significant impact not only on the economy of the entire world but also, in this specific instance, on the selected independent variables that affect the turnover of food and drink companies. These variables include unemployment, inflation, recruitment, airport flight statistics, and the number of tourists staying in accommodations. The variables for the subsequent empirical investigation were chosen with the assistance of the examination of a number of different scholarly journals. Although the articles focus on a variety of countries around the globe, the conclusions they provide are very relevant and have the potential to be applied to the Lithuanian market since the COVID - 19 virus has an impact on economies throughout the world.

Research Methodology

The research samples have been collected based on the literature review and the main results which have been conducted. Throughout that process, five different factors have been identified as potentially having an independent impact on the turnover of food and beverage enterprises. The following is a list

of the factors that are being utilised for this research, taking into mind all of the scientific literature analysis and the statistical data that was obtained specifically for this study:

Dependent variable:

- Y – turnover of food and beverage enterprises.

Independent variables:

- X1 - number of tourists accommodated;
- X2 - number of flights at Vilnius Airport;
- X3 - number of employees hired;
- X4 – unemployment rate;
- X5 – inflation.

The data was collected based on the information provided in two official databases. The Official Portal of the Statistics Department and the website for Lithuanian Airports both provided access to the data that was used in the particular study.

First, a calculation for the correlation analysis is made. This method can be used in this particular case because correlation analysis makes it possible to establish whether or not there is a link between the components being analysed, which are represented by quantitative indicators. The strength and direction of linear relationships between sets of variables can be evaluated by using correlation coefficients. These coefficients are used in statistical analysis. Through this study, we will establish whether or not there is a connection between the component that is dependent and the factor that is independent. On the basis of the data that are currently available, it is being assessed how the variables are related to one another. The correlation coefficient is calculated according to the Pearson correlation coefficient methodology proposed by (Freedman et al., 2007).

After determining the value of the correlation coefficient, two hypotheses are being raised (1):

$$\begin{cases} H_0 : r = 0 \\ H_1 : r \neq 0 \end{cases} \quad (1)$$

When we say that the value of the correlation coefficient is 0 and that there is no association between the variables, we are saying that the null hypothesis is accepted. If the value of the correlation coefficient is not equal to zero, then the alternative hypothesis states that there is a link between the variables and that the relationship does exist.

Calculating the value of the statistical T and the value of the critical T is the first step that must be taken before accepting any of the hypotheses that have been presented.

In accordance with the following formula (2), the statistical value of T may be quantified:

$$T = r \sqrt{\frac{n-2}{1-r^2}}, \quad (2)$$

where:

r is the value of the correlation coefficient;

The value of T that is considered as a critical T may also be identified in the statistical table; all that is required is the selection of the significance level and the value of df, which should be equal to $n - 2$.

When these two numbers have been calculated, the significance of the correlation coefficient may next be assessed. Therefore, getting the conclusion that the coefficient is statistically significant if the statistical value of T is bigger than the critical value of T. This means that an alternate hypothesis is

accepted in this scenario. In order to proceed with the analyses, we only need to consider indications that are statistically significant.

Following the examination of correlation, the following stage of the research consists of pairwise regression analysis as well as multivariate regression analysis. It is only carried out using statistically significant independent variables, the existence of which is verified by correlation analysis. The purpose, as well as the goal, is to conduct research into the manner in which the dependent component is impacted by each independent factor in sequence.

The formula that will be used to obtain the linear regression equation is as follows:

$$y = a_0 + a_1x, \quad (3)$$

The formula that will be used to obtain the multivariate regression equation is as follows:

$$y = a_0 + a_1x_1 + \dots + a_nx_n, \quad (4)$$

where:

a_0 ; a_1 - regression line coefficients;

x is an independent variable.

There are three prerequisites that need to be satisfied in order to construct and evaluate a linear regression equation: the coefficient of determination must be higher than 0.25 in order to be considered valid; the significance of the regression must be lower than 0.05 in order to be considered significant; $P \text{ value} < 0.05$.

Research results

In the first step of the process, a correlation analysis was carried out in order to determine whether or not there is a link between the variables that is statistically significant. The relationship between the primary research variable, which is the turnover of food and beverage enterprises, and the following additional factors: the number of tourists who were accommodated; the number of flights that took place at Vilnius Airport; the number of employees who were hired; the unemployment rate; and inflation, five hypotheses are being tested in this instance.

As a result, the five null hypotheses H_{0i} , $i = 1, 2, 3, 4, 5$ have been tested. These hypotheses indicate that the variables do not have a statistically significant linear connection with one another. The findings of the correlation analysis are shown in Table 1.

Table 1. The results of correlation analysis (source: composed by authors)

		Turnover of enterprises without VAT, M EUR	Number of tourists accommodated in Lithuania	Vilnius airport flight statistics	Employees recruited, thousands	Unemployment rate (15-74 years), seasonally adjusted, %	Inflation, %
Turnover of enterprises engaged in food and beverage service activities without VAT, M EUR	Pearson Correlation	1	.901**	.620**	.694**	-.118	.085
	Sig. (2-tailed)		.000	.000	.000	.514	.638
	N	33	33	33	33	33	33

Number of tourists accommodated in Lithuania	Pearson Correlation	.901**	1	.730**	.592**	-.217	-.142
	Sig. (2-tailed)	.000		.000	.000	.224	.431
	N	33	33	33	33	33	33
Vilnius airport flight statistics	Pearson Correlation	.620**	.730**	1	.509**	-.681**	.006
	Sig. (2-tailed)	.000	.000		.002	.000	.974
	N	33	33	33	33	33	33
Employees recruited, thousands	Pearson Correlation	.694**	.592**	.509**	1	-.136	.386*
	Sig. (2-tailed)	.000	.000	.002		.451	.026
	N	33	33	33	33	33	33
Unemployment rate (15-74 years), seasonally adjusted, %	Pearson Correlation	-.118	-.217	-.681**	-.136	1	-.257
	Sig. (2-tailed)	.514	.224	.000	.451		.148
	N	33	33	33	33	33	33
Inflation, %	Pearson Correlation	.085	-.142	.006	.386*	-.257	1
	Sig. (2-tailed)	.638	.431	.974	.026	.148	
	N	33	33	33	33	33	33
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

In this particular circumstance, it is necessary to analyse the first line of the data since it indicates the correlations of the remaining variables with the dependent variable. The findings of the correlation analysis indicate that the variable under investigation and three other factors—the number of tourists who were accommodated, the number of flights that departed from Vilnius Airport, and the total number of employees who were hired—have a linear relationship that is supported by statistical evidence and is significant. In the first scenario, a highly robust linear connection was discovered, with $r = 0.901 > 0.90$ ($p = 0.000 < 0.05$), whereas in the other two scenarios, a moderately robust linear relationship was discovered, with $0.50 < r = 0.62 < 0.70$ ($p = 0.000 < 0.05$) and $0.50 < r = 0.694 < 0.70$ ($p = 0.000 < 0.05$). It is also essential to point out that the correlation coefficients are positive in all scenarios, indicating that a straight linear link exists between the variables. This simply demonstrates that the turnover of food and beverage firms is expanding correspondingly with the rise in the number of visitors who are being accommodated, the number of planes that are taking off and landing at Vilnius Airport, and the number of staff who have been employed. Therefore, three of the null hypotheses, H_{0i} , $i = 1, 2, 3$, were found to be false, while H_{0i} , $i = 4, 5$ could not be rejected. This is due to the fact that the correlation between the unemployment rate and inflation was found to be -0.118 ($p = 0.514 > 0.05$), and the correlation between inflation and $r = 0.085$ ($p = 0.638$).

A pairwise regression analysis was carried out with the purpose of conducting an in-depth investigation if a connection exists between the two sets of variables. The findings of this study are shown in the figures that follow. In the first scenario, we investigate if there is a connection between the amount of money made by businesses that provide food and drink and the number of people who stay in hotels.

According to the findings of the regression analysis, the number of tourists who were accommodated and the turnover of businesses that engaged in activities related to food and beverage service have a

statistically significant effect on the turnover of businesses that were engaged in activities related to food and beverage service ($t = 11.571 > 1.96$; $p = 0.000 < 0.05$). (Table 2).

The developed regression model has a coefficient of determination (R^2) that is equal to 0.806. This demonstrates that the number of visitors who are accommodated may account for as much as 80.6% of the revenue generated by food and beverage businesses.

There are no exceptions taken into consideration in the data since the value of Cook's measure is less than 1 for any of the observations. The Durbin-Watson statistic is 0.467, which indicates that there is an autocorrelation of the errors.

The equation for the pairwise relationship may be drafted as follows:

$$Y = 31,385 + 0.001 * X_1 \quad (5)$$

This equation demonstrates that there is potential for a one million euro rise in revenue for businesses that provide food and beverages if there is a one thousand person increase in the number of visitors who are accommodated.

The results of the pairwise regression of Vilnius Airport Flight Statistics show that the number of flights has a statistically significant effect on the turnover of catering and beverage companies ($t = 4.405 > 1.96$; $p = 0.000 < 0.05$). This was determined by comparing the number of flights to the turnover value (Table 3).

The analysis of variance (ANOVA) performed on the model revealed that the created model had a high probability of being significant ($F(1, 31) = 19.404$; $p = 0.000 < 0.05$).

The proposed regression model has a coefficient of determination (R^2) of 0.365, which indicates that the number of flights at Vilnius Airport explains about 36.5 per cent of the variability in the turnover of catering and beverage enterprises.

There are no exceptions taken into consideration in the data since the value of Cook's measure is less than 1 for any of the observations. Additionally, the Durbin-Watson statistics is 0.380, which indicates that there is an autocorrelation of the mistakes. This can be seen by looking at the graph.

The model of equations in pairwise form is as follows:

$$Y = 36,381 + 0,010 * X_2 \quad (6)$$

In summary, it demonstrates that a one hundred per cent increase in the number of planes departing from Vilnius Airport would result in a one million euros increase in the revenue generated by catering and beverage enterprises. The findings of the regression model of the number of employees revealed that the number of newly hired employees and the turnover of food and beverage businesses are related by a statistically significant linear relationship ($t = 5.366 > 1.96$; $p = 0.000 < 0.05$). This was shown by the results of the model of the number of employees (Table 4).

During this time, the model's coefficient of determination, indicated by the number R^2 , was found to be equal to 0.465. This demonstrates that around 46.5 per cent of the variance in the turnover of food and beverage businesses may be attributed to the number of workers recruited in these businesses.

There are no exceptions taken into consideration in the data since the value of Cook's measure is less than 1 for any of the observations. In addition, the Durbin-Watson statistic is 1,340, which indicates that there is an autocorrelation in the model errors. This can be seen by looking at the distribution of the model errors.

The following is an example of the equation for pairwise regression:

$$Y = -2.041 + 0.001 * X_3 \quad (7)$$

It demonstrates that a one-thousand-people increase in the number of workers employed by food and beverage companies results in a one-million-Euro increase in turnover for those businesses.

Therefore, in order to summarise the findings of the pairwise regression analysis, it is possible to state that the following coincided with the findings of the correlation analysis: the number of tourists who were accommodated, the number of flights that originated from Vilnius Airport, and the number of employees are statistically significantly related to the turnover of the catering industry; however, unemployment and inflation do not have a direct relationship with the turnover of the sector.

Table 2. The results of pairwise regression analysis (source: composed by authors)

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.901 ^a	.812	.806	9.518	.467
a. Predictors: (Constant), Number of tourists accommodated in Lithuania; b. Dependent Variable					

Table 3. The results of pairwise regression analysis (source: composed by authors)

Coefficients ^a								
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	36.381	6.677		5.449	.000		
	Vilnius airport flight statistics	.010	.002	.620	4.405	.000	1.000	1.000

Table 4. The results of pairwise regression analysis (source: composed by authors)

Coefficients ^a								
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.041	12.368		-.165	.870		
	Employees recruited, thousands	.001	.000	.694	5.366	.000	1.000	1.000

Multivariate regression analysis was performed by initially including in the model all five independent variables with which pairwise regression analysis was performed.

The results of the multivariate regression analysis show that only the number of tourists accommodated ($t = 7.241 > 1.96$; $p = 0.000 > 0.05$) and inflation ($t = 2.461 > 1.96$; $p = 0.021 < 0.05$) are statistically significant variables in the turnover regression of food and beverage service enterprises. The influence of both of these factors on the dependent variable is positive, i.e., as the number of accommodated tourists and inflation grows, the turnover of food and beverage service companies grows accordingly. On the other hand, such a result, when the variables that were statistically significant in the pairwise regression became statistically insignificant in the multinomial regression, could have been caused by

the fact that the number of accommodated tourists, the number of flights at Vilnius airport and the number of hired employees are highly correlated.

ANOVA statistics of the model showed that the constructed multivariate regression model is statistically insignificant and suitable for describing the considered data ($F(5, 31) = 41.613$; $p = 0.000 < 0.05$).

Meanwhile, the coefficient of determination of the model is equal to $R^2 = 0.864$. This shows that all five variables explain about 86.4 per cent of the turnover of food and beverage companies.

Since the value of Cook's measure does not reach 1 for any observation, it is considered that no outliers were found in the data. In addition, the Durbin-Watson statistic is equal to 0.900, which indicates that there is autocorrelation in the model errors.

The following is presented as an equation for multivariate regression:

$$Y = -4,273 + 0,001 * X_1 + 0,001 * X_2 + 0,001 * X_3 + 3,196 * X_4 + 10,794 * X_5 \quad (8)$$

The equation of the model shows, then all of the variables have a positive influence on the turnover of catering and beverage companies. If the number of accommodated tourists increases by 1 thousand, the turnover of catering and beverage companies will increase by 1 million Euros. Meanwhile, if inflation increases by 1 percentage point, the monthly turnover of catering and beverage companies would increase by 10.794 million. Euros if other factors do not change.

Conclusions

When looking at the various situations that each country faced in the context of the COVID - 19 pandemic, it is feasible to see that policies that each country implemented to prevent the spread of the virus were and are, to varying degrees, dynamic but mainly the same. In addition, the travel and hospitality industry, along with the service industry, has been particularly hard impacted by global economic and social conditions. It is self-evident that economies in countries whose tourist sectors are more developed have been hit harder by the recent economic downturn than those economies in countries whose economies are less reliant on this industry. The review of the relevant literature led to the identification of five economic factors that, it is hypothesised, might have a substantial influence on the amount of revenue generated by the food and beverage service industry in Lithuania. They are as follows: the number of tourists, the statistics of flights at Vilnius Airport, the number of workers employed, the unemployment rate for those aged 15 to 74, seasonally adjusted, and inflation. To a lesser degree, each of these factors has an effect on the revenue generated by businesses that offer food and beverage services (based on the literature review).

The values of all these indicators hit their nadir in April, which was the lowest value they had achieved during the whole research period. In addition, during the time period under review, the only tourism indicators that reached or surpassed the level they had reached before the pandemic were turnover and the number of new employees hired. Other tourism indicators, such as the number of tourists accommodated and the number of flights at Vilnius Airport, have not yet reached the level they had reached before the pandemic. Meanwhile, the expansion of COVID-19 has caused various responses from macroeconomic statistics. For example, unemployment has been slowly rising until the year 2020, hit its high in September, and has begun to fall since then. Towards the start of the pandemic, inflation came to a standstill; nevertheless, it started to grow at the end of the observation period and eventually reached levels that were greater than they had been before the outbreak.

The findings of the correlation and regression analysis indicate that there is a significant relationship ($r > 0.90$) between the amount of money made by businesses that deal in food and beverages and the number of visitors who are accommodated. The linear association between the number of flights departing from Vilnius Airport and the number of new workers employed is average ($0.60 < r < 0.70$), according to the independent variables. There is no statistically significant relationship between turnover in the food and beverage industry and macroeconomic indicators such as the unemployment rate and inflation. These factors include the rate of unemployment. Multivariate regression analysis showed that the number of

accommodated tourists has the greatest influence on the dependent variable, as the standardised beta coefficient of this variable is the highest.

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THE RELATIONSHIP BETWEEN THE INDUSTRY-LEVEL ECONOMIC DEVELOPMENT AND HUMAN DEVELOPMENT IN LATVIA

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Abstract

Research purpose. There is some empirical evidence of the relationship between economic and human development at a country level. Human development is most frequently proxied by the Human Development Index (HDI). Considering the fact that HDI is a measure covering the fields of several Sustainable Development Goals (SDGs), the overwhelming idea of the research is to determine the impact of sector economic development on the achievement of SDGs. The research goal is to establish if there is a relationship between economic development, using Latvian sector statistics, and the human development of Latvia.

Design / Methodology / Approach. The paper uses different types of regression analyses of the longitudinal data to determine if there is a relationship between HDI and economic development indicators in different sectors of the Latvian economy. The sample includes industry-level data on eight industries and HDI data collected from 2010 to 2020. The regression analysis was applied to HDI as a dependent variable, and a selected set of industry variables was assessed as a group of independent variables (both individual for industries and aggregated on the country level). The set included the indicators of the turnover of companies, number of companies, added value, total personal costs and number of employees in full-time employment.

Findings. The findings partly support the proposal that economic development relates to human development because some factors of economic growth have formed a statistically strong relationship with HDI (added value, total personal costs, and the number of employees in full-time employment), while others have not (turnover and number of companies). The fact that some statistically proven relationships had a positive while others had a negative direction suggests that the relationship between economic development and human development is bidirectional depending on specific indicators.

Originality / Value / Practical implications. There is an obvious research gap in the investigated field in Latvia and even in the Baltics. The current paper contributes to the knowledge base about factors affecting human development and enlarges the statistical data basis. Besides, this study contributes to the development of national strategic plans by determining which sectors and which indicators have a significant impact on HDI. Research information will be useful for the NAP report after 2027 for assessing the level of achievement of strategic goals, especially in the priorities "Strong families, healthy and active people", "Knowledge and skills for personal and national growth", and "Competitiveness and material well-being of companies".

Keywords: economic growth; human development; industries.

JEL codes: O10; O15.

Introduction

Policymakers have long been attempting to promote and sustain economic growth (Sultana et al., 2022) because it is the foundation of the stable and prosperous development of societies. Various aspects of

economic growth have been included in Agenda 2030 of the Sustainable Development Goals (henceforth - SDGs) of the United Nations (UNDP, 2022). For example, Goal 8 aims at providing decent work and ensuring economic growth. In contrast, Goal 9 addresses the issues of industry, innovation and infrastructure and Goal 7 on the provision of affordable and clean energy. Some other sustainable goals, however, focus on human capital. Goal 1 promotes the eradication of poverty; Goal 3 aims at improving healthcare and well-being; goal 4 asserts the importance of good education, while Goal 10 prioritises socioeconomic equality. This means that the United Nations view the attainment of economic growth through the prism of human development. Such an approach is supported by empirical evidence consistent with which there is a relationship between economic growth and human capital development (Stephen, 2015; Suri et al., 2011).

Human capital affects economic development directly and indirectly through technologies (Diebolt & Hippe, 2019). The need to explain the interaction of human, technological and economic capitals even led to the emergence of Unified Growth models (Diebolt & Hippe, 2019). Furthermore, human capital is the key driver of innovations, which generate economic growth, and transformations and realise national potentials (Martinidis et al., 2022) that are essential for the transition to Society 5.0 and Industry 5.0, ultimately leading to the emergence of human-centric industries (Carayannis & Morawska-Jancelewicz, 2021) that merge human intelligence with artificial and machine performance in industries, creating symbiotic ecosystems (Leng et al., 2022), such as human cyber-physical systems (Saniuk et al., 2022). Such human-centric societies and industries (5.0) are expected to enhance the quality of life of societies due to their focus on sustainability, human life, and the environment (Ghobakhloo et al., 2022). The values and objectives of Society 5.0 and Industry 5.0, therefore, are in contrast to those of the current Industry 4.0, which aims at profits (Ghobakhloo et al., 2022). Clearly, economic, and human development should be considered in tandem to ensure the transition to the next level of socioeconomic development. One good example that demonstrates the effect of human development on economic development is provided by the research of Grillitsch et al. (2021). In their study, the authors examined the effect of change agency, which is created by human agency, on regional development in Norway and determined that the potency of human capital to transform economic development is undeniable due to its ability to generate innovations and engage in entrepreneurial activities. In their view, this happens because human agents make decisions, develop strategies, and take actions that create transformations and economic growth (Grillitsch et al., 2021).

The relationship between economic and human development could be studied at different levels, such as global, regional, and national. The application of global and regional research findings on small countries with a mediocre level of development might be problematic because the data collected on large and medium-sized nations and well-developed small nations might not be fully relevant or descriptive of them. One such small nation is Latvia, located in the Baltic Sea region. According to the recent country report of the Organization for Economic Cooperation and Development (2022), Latvia needs to continue to invest in economic growth and address human capital challenges, such as high levels of poverty and poor funding of health care. The Ministry of Economics of the Republic of Latvia, in the Annual Report 2021, postulated the need to boost human capital development as part of the overall economic development of the nation. However, any need for economic theory should be rooted in statistical analysis. Therefore, the goal of this research was to statistically determine if there is a relationship between economic development and human development in Latvia. Economic development was encoded through various economic development indicators across various industries, while human development was proxied through the human development index. If such a relationship was to be obtained, the need to invest in human development in order to support economic growth would be justified in the context of Latvia.

One major limitation of this research includes the limited number of industries and indicators chosen to represent these industries. Another limitation pertained to the choice of only one parameter of human development that was used to represent the entire domain of human development. The selected indicator – the human development index – does not encode a variety of important human development issues such as empowerment, inequality, poverty, etc. In the future, this research should be expanded to incorporate more industries and more indicators of both industrial and human development.

Literature review

The core representation of any nation is its people. The well-being of people is based on material goods, healthcare and social services that are available to them (Qui et al., 2022). Therefore, the core of all economic activities lies in the cycle of economic activities that are produced by and for the benefit of people. Consequently, improvements in one type of development should lead to improvements in some other types of development. However, it is not always the case because the relationship between economic and human development is complex.

On the one hand, economic development has been viewed as an impetus for human development (Croes et al., 2021). Since economic development is expected to result in a higher level of overall development of a nation (Xu & Li, 2020), the quality of life is expected to improve, too. However, in some cases, a higher level of economic development might not lead to improvements in the quality of life, in which case economic development does not contribute to the overall human development but rather widens a socioeconomic inequality gap (Akisik et al., 2020). Under such circumstances, economic development is promoted neither by human nor technological capital; instead, it is fuelled by natural resources (Rahim et al., 2022). Therefore, the economic development of such nations might be neither economically nor environmentally sustainable. In contrast, if economic development correlates with a higher level of human development, such economic development is stable, fruitful, and consistent with the Sustainability Goals of the UN Agenda 2030. The reason pertains to the contribution of human capital to economic growth.

On the other hand, the human development level affects the level of economic development of nations either by increasing or reducing economic growth (Rahim et al., 2021). In fact, the attainment of SDGs is possible only via human capital development (Fahimi et al., 2018) because human capital has a certain level and range of competencies to produce economic outputs (Dasic et al., 2020). Furthermore, human capital represents an interface connecting the input of consumed resources and the outputs generated by resource consumption (Shidong et al., 2022). Therefore, the quality of human capital yields economic growth and actions that translate into a level of sustainability of resource use and the generation of economic outputs.

Thus, economic development affects human development, and human development affects economic development. This means there is a relationship between economic and human development. This relationship forms the core of socioeconomic development, which combines economic outputs with those related to human development in society. As with any relationship, the relationship between economic and human development outputs is complex because it is formed by various components, or else indicators, that are connected in a network-like manner. The connectivity of such networks is sensitive to changes in the market, which might partly explain why some researchers, such as Akisik et al. (2020), have obtained the effect of economic development on human development. In contrast, others have gained the opposite outcomes (Rahim et al., 2021). As a result of such inconsistency, some researchers question the size and significance of the impact of human capital on economic growth (Zhang & Wang, 2021). Nevertheless, there is a growing body of research, proving the opposite (Zhang & Wang, 2021). For example, in a study of 141 countries, Sultana et al. (2022) proved the direct relationship between human capital quality, especially in the areas of education and health, and economic growth. In their study, a higher level of human capital correlated with a higher level of economic growth, which is consistent with Xu & Li (2020), who explored this relationship in China.

Overall, empirical research supports the bidirectional effect of economic and human development on each other. When human capital expands activities across various sectors of the economy, it results in economic growth. For example, the expansion of the tourism sector in Ecuador, created by human capital, contributed to the enhanced indicators of economic growth (Rivera, 2017). However, for human capital to be able to generate new economic outcomes leading to foreign investment into the economy (Shidong et al., 2022), the economy needs to invest in human capital to enable it to yield innovations, becoming innovative human capital that works effectively in knowledge economies (Xu & Li, 2020). This creates the bidirectional cycle of the effect of economic and human development on each other.

The relationship between economic and human development is studied through the evaluation of the relationship among indicators of economic and human development across various sectors of the economy. The economic indicators that are affected by human capital include GDP, capital deepening, technology, labour productivity and financial development, both short- and long-term (Dankyi et al., 2022; Pelinescu, 2015). No wonder the ageing population with lower productivity is often associated with slower economic growth (Bairaliya & Miller, 2021). Although there are various human capital factors, such as the level of education or unemployment, the key indicator used as a proxy for human capital development is the Human Development Index (henceforth – HDI) (Biggeri & Mauro, 2018; Dorfell & Schuhmann, 2022). HDI has been construed for the United Nations Development Programme in order to assess the living conditions of the population (Biggeri & Mauro, 2018) and the macro-level socioeconomic development of nations (Resce, 2021) in comparison to other nations (Mangaraj & Aparajita, 2021). In other words, HDI has been designed to tap into two major aspects of the quality of life of the population – economic factors and social aspects, including education and health (Assa, 2021). Despite HDI limitations, such as methodological constraints in the construction of the index and the exclusion of the factors of environmental sustainability, freedom (Biggeri & Mauro, 2018; Mangaraj & Aparajita, 2021), inequality, poverty, security, etc. (UNDP HDR, 2022), HDI is still widely used. HDI represents a single indicator, which is formed by analysing data of three indices - life expectancy index, education index and GN index, which cover the three dimensions of HDI – long and healthy life, knowledge, and a decent quality of life, respectively (UNDP HDR, 2022).

To sum up, theoretical and empirical evidence suggests a relationship between economic growth and human development. Such a relationship might be bidirectional and is measured by various indicators. Since the research output on the relationship between economic and human development in Latvia is sparse, the value of this research lies in the exploration of such a relationship across a set of Latvian industries.

Methodology

The aim of the research was to determine if there is a relationship between economic development and human development in Latvia. To attain the aim, the following research question was proposed: Is HDI affected by industry development indicators across various industries in Latvia? To answer the research question, the following primary set of hypotheses was proposed:

- Hypothesis 1. The human development index is positively related to the turnover of Latvian companies which are involved in key industry sectors.
- Hypothesis 2. The human development index is positively related to the number of Latvian companies which are involved in key industry sectors.
- Hypothesis 3. The human development index is positively related to the economic value added by Latvian companies which are involved in key industry sectors.
- Hypothesis 4. The human development index is positively related to the total personnel costs of Latvian companies which are involved in key industry sectors.
- Hypothesis 5. The human development index is positively related to the number of employees in Latvian companies which are involved in key industry sectors, in their full-time equivalent.

The data on HDI for Latvia was collected from the Human Development Reports of the United Nations Development Programme. The data on development indicators for eight industries were retrieved from the National Statistical Bureau of the Republic of Latvia. Both types of data were open source. The selected industries included accommodation and catering, construction, electricity, information and communication services, manufacturing, processing, service, and trade. In contrast, the development indicators across these industries covered the number of companies in the industry sector, their turnover in thousands of euros, added value in thousands of euros, personnel costs in thousands of euros and full-time employee equivalent. The final dataset comprised 88 elements for the analysis. This sample was considered robust as it was analysed as longitudinal data of the 11 years from 2010 to 2020. Several

factors affected the choice of the period. First, the methodology of HDI construction was amended in 2010 (see Mangaraj & Aparajita, 2021), which means that the content of HDI before 2010, on the one hand, and from 2010 onwards, on the other hand, differed. Second, 2010 was the onset of the stabilisation period after the world financial crisis.

The linear regression and multifactor regression analyses were run to determine if the national HDI is affected by economic development factors across different sectors of the national economy. Earlier, the long-term relationship between human and economic development through regression analysis was employed by Diebolt and Hippe (2019), who identified the impact of human development on economic development and innovations at regional levels in Europe. In the regression analysis of this paper, the human development index was used as a dependent variable, while a set of industry variables formed a set of independent variables (both individual for industries and aggregated on the country level). The analysis was run in SPSS.

The limitations of this method in relevance to the described sample, as well as the way to implement regression analysis, are described in many sources, including (Lester University, 2022). The key limitations include a relatively small sample (88 elements), which can be mitigated by the two factors. First, the selected industries were among the key industrial contributors to the economic development throughout the entire period of 2010-2020. In 2021, their collective input into the Latvian GDP was above 83%. Second, the sample could have been enriched only by adding data from the years which preceded 2010, and those were years influenced by the global economic crisis which would distort the prepared sample because the final data sample would include the data on economic development in the years of crisis and stable development. Therefore, the authors of this paper decided to accept the limitations produced by the size of the sample instead of verifying data collected under different macroeconomic circumstances.

Results

The results of linear and multifactor regression analyses are included in this section of the paper. First, the model was tested for accuracy (see Fig. 1).

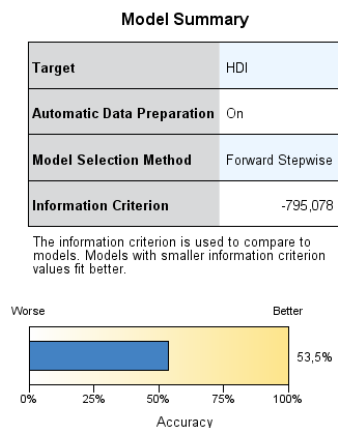


Fig. 1. Automated linear regression model of HDI development in Latvia (summary) (Source: authors' contribution)

Three independent variables have contributed to the variance explained for the dependent variable – total personnel costs (the most significant variable, which contributes 50% of accuracy to the developed model), number of employees in full-time equivalent (contributing about 38% to the accuracy of the developed model) and added value (contributing about 12% to the accuracy of the developed model).

The logic behind this looks relatively intuitive – total spending on personnel indicates the level of employee sustainability, which, in turn, is related to the elements of HDI. Added value and amount of full-time equivalent employees indicate the level of industrial development and are negatively related to the HDI level, which can be explained by the fact that the increased HDI arises from the industries providing higher economic outcomes with fewer employees, which is a feature of innovative human capital.

Following the preliminary automated linear regression analysis, the linear regression analysis was run for each of the studied factors that might define the HDI dynamics from the industry development perspective. The results for turnover as an independent variable are presented in Table 1.

Table 1. Regression analysis results for ANOVA (HDI is a dependent variable)

Variable/Constant	Significance	Coefficient b	Variance explained
Constant	0.000	0	1.4%
Turnover, thousand euro	0.273	0.118	

The variance explained by the range of company turnover is very low, 1.4% only, and the factor appears to be statistically non-significant. Thus, turnover is not considered an important predictor for HDI. Durbin-Watson criteria are equal to 1.47, indicating slight positive autocorrelation, almost on threshold level.

Table 2. Regression analysis results for ANOVA (HDI is a dependent variable)

Variable/Constant	Significance	Coefficient b	Variance explained
Constant	0.000	0	0.4%
Number of companies	0.582	0.059	

The variance explained by the range of company quantity is even lower than in the case of turnover, 0.4% only, and the factor appears to be statistically non-significant. Thus, the number of companies in a country is not considered an important predictor for HDI. Durbin-Watson criteria is equal to 0.83, indicating positive autocorrelation.

Table 3. Regression analysis results for ANOVA (HDI is a dependent variable)

Variable/Constant	Significance	Coefficient b	Variance explained
Constant	0.000	0	6%
Added value, thousand euro	0.022	0.244	

The variance explained by the range of value added is still low, 6%, but the factor appears to be statistically significant. Thus, the added value seems to be an important predictor for HDI, though it does not define the dependent variable to a great extent. Durbin-Watson criteria are equal to 1.83, indicating no autocorrelation is revealed by analysis.

Table 4. Regression analysis results for ANOVA (HDI is a dependent variable)

Variable/Constant	Significance	Coefficient b	Variance explained
Constant	0.000	0	10%
Personnel total costs, thousand euro	0.003	0.317	

The variance explained by the range of total personnel costs is 10%, and the factor appears to be statistically significant. Thus, personnel total costs seem to be an important predictor for HDI, though it does not define the dependent variable to a great extent. Durbin-Watson criteria are equal to 2.14, indicating no autocorrelation is revealed by analysis.

Table 5. Regression analysis results for ANOVA (HDI is a dependent variable)

Variable/Constant	Significance	Coefficient b	Variance explained
Constant	0.000	0	1.5%
Number of employees in a full-time equivalent, thousand euro	0.253	0.123	

The variance explained by the range of the number of employees is only 1.5%, and the factor appears to be statistically non-significant. Thus, the number of employees in a full-time equivalent is not considered an important predictor for HDI. Durbin-Watson criteria is equal to 2.23, indicating no autocorrelation is revealed by analysis.

The implementation of other regression types modelling to the assessing predictive power of the mentioned independent variables led to the same results as linear regression modelling, allowing to adhere to the linear regression.

To finalise the research, a multifactor regression model was developed to define HDI as a dependent variable. Within the process, both turnover and the number of companies are statistically non-significant variables to define the variance of HDI. The statistics on the coefficients for the other independent variables (number of employees in full-time equivalent, total personnel costs and added value) in the model are provided in Table 6. The variance explained by those three independent variables sums up to 45.4%, indicating the excellent prediction power for HDI in Latvia in the model.

Table 6. Regression analysis results for ANOVA (HDI is a dependent variable)

Model	Unstandardised Coefficients		Standardised Coefficients	t	Significance
	B	Std. Error	Beta		
(Constant)	,849	,002		401,580	,000
Number of employees in full-time equivalent	-3,974E-7	,000	-1,486	-5,382	,000
Personnel total costs, thousand euro	6,087E-8	,000	3,043	6,261	,000
Added value, thousand euro	-1,478E-8	,000	-1,336	-2,548	,013

As it was outlined in a comment to the automated linear regression, the factors of the added value and the number of full-time employees are negatively related to HDI.

Overall, the provided analysis allowed to define the following. Hypothesis 1 and Hypothesis 2 were not supported because the factors of turnover and the number of companies were found to be statistically non-significant predictors for HDI. In contrast, Hypothesis 3 and Hypothesis 4 were supported because both the added value and total personnel costs were proven to be statistically significant predictors for HDI. However, the relationship between these factors and HDI was different. In the case of the personnel costs, the relationship was positive, while in the case of the added value it was negative. Finally, Hypothesis 5 was partly supported, as the factor of the number of employees in a full-time equivalent did not appear to be a significant factor in simple regression analysis but was proven to be statistically significant in the multiple regression analysis. In contrast to the expectation of Hypothesis 5, the relationship was found to be negative.

Overall, three hypotheses were not supported by the research results, but two hypotheses were successfully verified. Specifically, the first major outcome of the regression analysis was the lack of a significant effect for the factor of turnover in relation to HDI. This means that hypothesis 1 was not supported. This result, however, is consistent with earlier research in which employee turnover was used as a factor of business and labour market development (Lazzara et al., 2022), not as a factor of HDI. The lack of a statistical relationship between staff turnover and HDI could be attributed to differences in factors that form HDI and that motivate staff turnover. While staff turnover is triggered by microeconomic factors, such as poor work conditions and staff competencies that enable them to find a better employment place, HDI is comprised by macroeconomic factors, such as expected years of schooling, mean years of schooling, life expectancy at birth, and gross national income (GNI) per capita.

Another output of the regression analysis was the lack of a significant effect for the factor of the number of companies in a country in relation to HDI. Hypothesis 2 was discarded, too. On the one hand, this result might be considered surprising as some previous research found that the size of the market affected human capital development (Sethi et al., 2019). On the other hand, some data indicate that the size of the market does not seem to translate into a level of human development. For example, in 2021, Switzerland ranked at the top of HDI, while India was significantly behind the leader. Clearly, the size of the Swiss market is smaller than that of India.

However, another result of the regression analysis was the lack of statistical relationship between the number of employees in full-time equivalent employment and HDI. Hypothesis 5 was not supported, either. This outcome is supported by earlier research findings. For example, Checa-Olivas et al. (2021) found that it is not only the quantity but also the quality of employment that affect the quality of life and hence, human development. The quality of employment is a complex concept that covers objective and subjective factors, such as place of employment, remuneration, working hours, the ratios of value-for-money, life-work balance, potential to realise own aspirations, etc. In fact, the Latvian economy, which is characterised by the mediocre standards of life in the context of the European Union, represents a hybrid economy type that combines traditional forms of employment with gigs. Therefore, the question of full-time employment, excluding part-time employment engagements, might not be fully relevant and descriptive of the daily reality of the labour market.

In contrast to earlier results, the regression analysis produced a statistically reliable outcome for the existence of a relationship between the economic value, added by Latvian companies of the selected industries, and HDI. Hypothesis 3 was supported. One reason that could account for the connection between the economic outputs of industries and human development refers to the purpose of Industry 4.0, which encompasses the period for which the data were analysed. Industry 4.0 focuses on the implementation of more advanced computerised and artificial intelligence systems at the workplace while creating a new role for a human (Saniuk et al., 2022). Thus, a human component is not excluded from Industry 4.0 operations.

The regression analysis also supported hypothesis 4 in accord with which there is a relationship between the total personnel costs at Latvian companies in specified industries and HDI. This outcome is not surprising because both indicators characterise human development, with the only difference being that the former one measures micro-economic performance, while the second one - macro-economic outputs. This result supports the proposal that investment in staff support, and development positively affects

overall human development. This position is consistent with Wang & Doty (2022), who claim that traditionally human resource development has been expected to contribute to overall human development, including the global scale.

Obviously, these research results should be taken with caution when extrapolating their outputs to all industrial sectors and the entire human development domain because only selected indicators were tested for both economic-industrial and human development categories. Nevertheless, despite such limitations, it can be concluded that since there is some relationship between economic development and human development, it is worth investing in human development because, ultimately, such investment supports economic growth and prosperity. The outcome resonates with Ziolo et al. (2021) who claim that the attainment of the United Nations Sustainable Development Goals depends on the level of economic development of a nation.

Conclusions

The key research outcomes are the following. First, industry development indicators have been found to relate to HDI and provide a significant share of variance explained for this dependent variable. Second, the number of companies involved in the production of products and services is a non-significant factor to predict HDI, while the factors of the added value, total personal costs, and the number of employees in a full-time equivalent are statistically significant variables. Thus, the main hypothesis of this research was confirmed – indicators used to assess industry development dynamics are related to HDI through an eleven-year period analysed in the Latvian environment. However, given the fact that not all factors have yielded a significant effect, it can be concluded that not all factors forming economic growth via the proxy of industry development indicators have a direct relationship with HDI. This explains why some researchers have been able to identify the impact of economic development on human development, and vice versa, while others have not. It seems the factor of economic growth plays an important role.

Overall, the findings point to the necessity to continuously invest and support the economic development of the national economy due to its connection to the development of human capital, which ultimately translates into a higher quality of life. The fact that both positive and negative relationships between the factors of economic development and HDI were obtained suggest that bidirectional relationship between economic growth and human capital development. This means that investment in human development ultimately supports economic growth.

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MEASURING THE IMPACT OF HUMAN RESOURCE DEVELOPMENT ON POVERTY INCIDENCE IN NIGERIA: A BOUND TESTING APPROACH

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Abstract

Research purpose: Eradicating poverty in the world requires some strategies, such as the poor having adequate access to productive assets and increasing their returns on assets, having adequate access to education and health facilities, increasing their access to job prospects, at the same time complementing these resources with other incomes. Hence, the goal of this study is to examine the link between human resources development and poverty in Nigeria, using annual secondary data from the Statistical Bulletin of the Central Bank of Nigeria from 1990 to 2020.

Design/methodology/approach: The Auto-Regressive Distributed Lag (ARDL) Technique was explicitly employed to arrive at the statistical and logical conclusions in determining the impact of human resource development in the face of poverty. In addition, the bound testing approach was used to measure Nigeria's long-run relationship between human resource development and poverty.

Findings: The study revealed that human resource development has a statistically insignificant but non-decreasing impact/effect on poverty incidence in Nigeria, based on the short-run ARDL assessment. Furthermore, the bound testing approach also indicates that there is indeed a long-run relationship between human resource development and poverty incidence in Nigeria. The study, therefore, concludes that poverty is inescapable and, hence, creates underdevelopment. The study advises governments at all levels to develop and implement policies and programs aimed at improving or enhancing the welfare and well-being of the masses through job creation in order to close the income gap between the affluent and the deprived.

Originality/value/practical implications: Fighting poverty in Nigeria has been one of the major priorities of most governments in Nigeria. These can be observed from the nationwide planning policies that have been focused on adequate provision of access to both human and natural resources. There has been an enormous call for the massive upgrading of the productive capacity of the people through investment in human resources. This paper is one of the several articles employed to evaluate the impact of human resource development on the incidence of poverty in Nigeria.

Keywords: Human Resource Development; Poverty Incidence; Bound Testing.

JEL codes: I3.

Introduction

Despite Nigeria's enormous wealth from both natural and human resources, mismanagement and corruption of these resources due to poor leadership have persistently contributed to poor social integration and economic development (Adogamhe, 2007; Bambale, 2011). As a result, the country continues to be threatened by poverty, and the numerous poverty reduction strategies adopted and implemented over the years have not made a significant positive impact on the lives of the citizens. Consequently, notwithstanding the vast resources, over 70 percent of Nigeria's population continues to live in poverty (Nwokeoma, 2010; World Bank, 2010).

Like other countries of the world, Nigeria also had a series of programs and policies targeted at poverty reduction. This has been going on for a long time now. Arogundade et al. (2011) note that, in an attempt to overcome its poverty problems, the Nigerian government has introduced different strategies and organized programs since 1972 till date. While they note the early efforts of the government in fighting

poverty, they also accept the fact that poverty reduction is the most difficult task facing emerging economies of the world.

Obviously, in Nigeria, available statistics indicate that the incidence of poverty has been rising since the 1980s. According to UNDP (2010), the percentage of the core poor has risen to 29.3 percent from 6.2 percent but dropped to 22.0 percent in 2004. Consequently, Omotola (2008) observes that more than 70 percent of Nigeria's population lives in abject poverty. The assessment of the poverty situation in Nigeria by international organizations is another testimony of the above statistics. While the UN Human Poverty Index placed the country among the 25 poorest nations in the world in 1999 (and 68.7 million living in poverty as of 2004) (UNDP, 2010a), the World Bank Group (2015) puts Nigeria in the third position among the top ten countries with extreme poverty. With an estimated population of over 170 million, Nigeria is counted among the countries whose over 70 percent of the population is in extreme poverty of less than US\$1.25 (₦200) per day; 7 percent of the world's 1.2 billion poor are Nigerians (World Bank Group, 2015). In that regard, the NBS (2012) reports that the poverty level in Nigeria as of 2004 was 54.4 percent, then rose to 69 percent in 2010 (accounting for about 112,518,507 Nigerians). From the bottom, the South-West, the North-East, and the North-West recorded 59.1 percent, 76.3 percent, and 77.7 percent poverty rates, respectively.

Benedict (2013) observes that poverty reduction programs have persistently been directed at unemployment, thereby neglecting the absolute poverty existing in rural areas, which is a major developmental problem in Nigeria. This might not offer the needed solution to poverty in rural areas. To achieve the goal of poverty reduction, more stringent and articulated measures and policies must be taken by the government. The President Obasanjo-led administration launched a series of economic reforms in 2004 designed to address the structural and institutional weaknesses of the Nigerian economy.

Different empirical studies have been conducted by different scholars on the issue of poverty. Because of the multidimensional nature of the concept of poverty, these studies have been conducted on different issues relating to poverty. While some studies focus on the nature of the family setup and the issues of poverty and income inequality (Gadi, Wang, & Lago, 2008; Currie & Goodman, 2020; Benzeval et al., 2018; Green et al., 2021; Ducan, 2021 and Ducan et al., 2020), others look at the causality of poverty, low income and poor child health (Chaudry & Wilmer, 2016). The main focus of this study is on the effects of health, education, employment, and youth development on poverty. These will be reviewed briefly, and the findings of the different studies on the themes will be highlighted.

This study intends to take a multidimensional approach to poverty reduction. The study will assess the effectiveness of Human Resources Development (through health, education, employment, and youth development) to determine whether the goal of poverty reduction has been achieved in Nigeria. The study looks at this approach as being important because assessing poverty from a one-dimensional approach does not give a clearer picture of what actually happens on the other side of the poor man's standard of living. The following research questions are answered: What is the effect of health on poverty reduction in Nigeria? What is the impact of education on poverty reduction in Nigeria? Will employment have any impact on poverty reduction in Nigeria? Lastly, will youth development have any impact on poverty reduction in Nigeria? Hence, the hypothesis tested is H_0 : Human Resource Development has no significant influence on poverty incidence in Nigeria.

Literature review

Poverty

According to Bourguignon and Chakravaty (2003), poverty has been in existence for many years, and it will continue to exist in many countries. Reduction of poverty is, therefore, one of the serious challenges facing many developing countries where the majority of the people are poor (Ogwumike, 2002). A number of definitions have been attached to the concept. However, scholars do not generally agree on a specific definition of poverty because of the relativity of the term, but instead look at the phenomenon from its multidimensional aspects (Sen, 1983; Strier, Eisikovits, Sigad, & Buchbinder, 2015).

Although a multidimensional approach to poverty is emphasized by many scholars, Mencher (1967) believes that while relative standards recognize economic inequality as the major pointer of poverty, absolute standards for poverty assume economic insufficiency as the bane of poverty. In addition, monetary deprivation is also an important aspect of multifaceted poverty, which does not appropriately stand in for other types of deprivation (Alkire & Seth, 2015). However, to Hoynes, Page, and Stevens (2006), an individual is considered to be poor if his total family income in a given year, before the deduction of tax, is below the poverty level or threshold for his family size and age composition.

Perhaps, a more comprehensive definition of poverty is the one given by The World Bank (2005) which sees poverty as hunger, lack of shelter, sickness, and inability to see a doctor, illiteracy, joblessness, and child mortality brought about by unclean water; it is powerlessness and lack of representation and freedom. This definition looks more encompassing as it touches on all aspects of human life. More particularly, it hinges on the basic necessities of life because, in the words of Aigbokhan (2000), it includes the inability and unaffordability to achieve a minimum standard of living. Similarly, the United Nations Development Programme (UNDP, 2010b) put it that poverty is a denial of choices and opportunities, which also results in a violation of human dignity. It as well means a lack of basic capacity to participate effectively in society due to inadequate resources to have enough to feed or clothe one's family, coupled with illiteracy and sickness due to the inability to go to school to acquire education or clinic to access modern health services respectively.

Review of Health on Poverty

Poverty exhibits serious and glaring affliction on human development. Shamaki, Rostam, and Adamu (2013) contend that the basic capabilities in humans are to live a long and healthy life, to be educated, to have access to basic social amenities, and to be able to participate in all activities of the community and society. They see personal health as being dependent on poverty and culture in society. In a similar study, Messias, Jong, and McLoughlin (2005) argue that personal health and well-being affect human and community empowerment, which is essential for health promotion. Furthermore, WHO (2002) views a healthy population as an instrument for economic prosperity. However, ill health adversely disrupts the well-being of the poor by imposing a significant level of risks on them.

Similarly, the works of Heidarnia, Ghaemian, Montazeri, and Abadi(2013) point out the fact that health and socioeconomic status are closely related because socio-economically disadvantaged group experience higher mortality and poorer health condition. In line with that, Fatusi (2014) observes a strong and two-sided relationship between health and poverty; "poverty makes people more vulnerable to ill health, and ill health tends to lead to poverty."

In addition, Abbott and Hobby (2005) declare that there is very strong evidence that relates poverty to poor health but suggests welfare benefits as very useful avenues for increasing the incomes of deprived people. On the other hand, Fuller-Rowell, Evans, and Ong (2012) suggest that even though social discrimination is one of the most important reasons responsible for the influence of poverty on physical health, very little is known about the actual factors connecting poverty to health over the life course.

From another perspective, Strully, Rehkopf, and Xuan (2010) argue that poverty restricts access to health necessities like inadequate diet, which may even affect the yet-to-be-born child through the mother. That is why Rose and Hatzenbuehler (2009) contend that ill health and poverty cannot be separated because unhealthy living and working conditions mar health and reduce life span. However, Cao and Liu (2015) state that there is no difference between the overall physical health of the poor and non-poor; but that poor children have worse mental health and are at higher risk of mental health problems because of lower self-esteem, less family support, and lower monthly household income than the non-poor children.

Adekoya (2018) examined the causal link between the explicit measurement of human capital in terms of health and education and its effects on reducing poverty, as shown by per capita income throughout the specified time period. To ascertain if the components of education and health care have any precedence or effect(s) on per capita income, the study employs the Granger causality test using a vector error correction mechanism (VECM). The findings show that there is no causal relationship, either one-

way or two-way, between government spending on health and education, infant mortality, gross enrolment ratio, and per capita income. However, there have been instances of one-way causality for literacy rate, life expectancy, and per capita income. This means that the federal government should make sure to increase its investments in health and education because these are crucial components that can aid in reducing poverty.

Health problems have become challenging issues in the fight against poverty in most developing countries. As observed by Carrin and Politi (1995), poor health is a severe problem in developing countries, but the fundamental cause is poverty. In line with this assertion, Initiative (2009) reports that one in every five of the world's people lives in abject poverty. This strong relationship between poverty-increased morbidity and mortality, according to Boyer et al. (2014), has become a serious public concern in the current economic context. Santiago, Kaltman, and Miranda (2013) also observe that poverty is consistently linked with health problems, particularly mental health. Despite the need for care, many poor children and adults do not receive mental health services.

Apart from health, another index of human development is education. Education prepares an individual to become relevant to himself, his community, and society at large. As maintained by Mihai, Țițan, and Manea (2015), the relationship between poverty and illiteracy has been a topic of increasing concern among researchers in the last few decades. Lack of it may mar the progress and well-being of the individual.

Review of Education on Poverty

The relationship between poverty and education has been extensively studied by many researchers and under different circumstances. For instance, Knight, Shi, and Quheng (2010) observe that there are close and strong relationships between poverty and education in a number of ways, and these interactions are capable of creating a vicious circle of educational deprivation and poverty. On the other hand, if properly handled, educational attainment will tend to increase wages and labor productivity in both agriculture and the informal sectors (Morrisson, 2002).

Aduke (2012) is also of the opinion that youth enhancement through comprehensive education with professional training will result in poverty reduction among youths in Nigeria. Ukwueze and Nwosu (2014) agree that higher education for the youth can possibly reduce poverty.

In contrast, Wikeley, Bullock, Muschamp, and Ridge (2009) argue that education alone cannot bring about the desired solution to poverty problems. However, the interactions of the youth with the outside world can significantly make a difference. However, Nasir, Alam, and Alam (2016) argue that the fact that both poverty and education are interrelated in many aspects, the reduction of poverty can be done through the imparting of productive and effective education by studying the poverty problem in the context of education.

Studies by Thapa (2013) maintain that education is one of the major indices of human development, the others being health and employment. In that regard, Bakhtiari and Meisami (2010) argue that education is an essential agent of human development, more so because an enlightened society is more conscious of the factors affecting its health and in a better position to take precautions. On the other hand, Siddique, Shehzadi, Shaheen, and Manzoor (2016) identify poverty, illiteracy, and poor quality education as the major problems in developing countries.

Similarly, Spaul (2015) argues that "the poor quality of education that learners receive helps drive an intergenerational cycle of poverty where children inherit the social standing of their parents and caregivers, irrespective of their own abilities or efforts."

Furthermore, education and health, the two most important indicators of human development, interact with each other either positively or negatively, and this interaction has a tendency to make them work together (Morrisson, 2002).

Similarly, Cremin and Nakabugo (2012) state that education is necessary for the growth of any economy and for poverty reduction because it contributes to health gains, lowers fertility, improves infant survival, promotes higher labor productivity, and increases the growth in GDP, as well as integrating

the individual in social, political, and cultural life. There is no doubt, therefore, that quality education, according to Spaul (2015), is the acquisition of functional knowledge, skills, and values that are regarded as essential and valuable by society.

Between 1990 and 2016, Ewubare and Mark (2018) examined the relationship between human capital growth and poverty eradication in Nigeria. The impact of enrolment in elementary and secondary schools, as well as spending on both public and private healthcare, on the poverty level, were specifically explored. The National Bureau of Statistics and World Bank World Development Indicators provided the data needed for the research. As data analysis methods, ADF unit root, Johansen-Juselius cointegration, fully modified least squares, and the Granger causality test were all used. The results of the unit test clearly show that there is a mixed integration of the variables, with an order of integration ranging from zero to one. The cointegration tests' trace and Max-Eigen statistics show that the model has two co-integrating equations. This conclusion implies a long-term link between the poverty level and underlying metrics of human capital development. According to the results of the co-integrating regression, enrolment in primary and secondary schools, as well as public healthcare expenditures, are all strongly correlated with poverty levels, whereas private healthcare spending is not. Poverty is reduced by 0.697 percent when more children attend primary education and by 0.84 percent when more students enroll in secondary school. Similar to the last example, a percentage increase in public healthcare spending decreases poverty by 16.63 percent on average. This shows that public investment in health care is effective in lowering both the amount and the depth of poverty in Nigeria. The findings of the Granger causality test also demonstrate joint causality between the explanatory factors and poverty level. Given this conclusion, it is advised that policymakers, among other things, make sure that Nigeria's approach to reducing poverty includes expanded access to education through increasing primary and secondary school enrolments and public healthcare.

Review of Employment on Poverty

Apart from health and education, employment is another important index of human development used in the fight against poverty. According to Alkire (2007), "employment is certainly not a new dimension of well-being; but it is sometimes forgotten in human development and poverty reduction policies, or at least, not considered in sufficient depth ." However, employment is not possible without good health and qualitative and formidable education. Therefore, if both health and education should function as strong agents in fighting poverty, the two should be able to prepare an individual to be gainfully employed and to be able to function effectively in one's environment.

Gábos et al. (2015) identify three factors that could lead to success in poverty reduction. These factors are as follows: the dynamics of economic growth, equitable and fair distribution of employment growth, and a well-worked out social welfare system that will cater to the households who are unable to generate some income for themselves due to labor market segregation.

The relationship between poverty and employment (or unemployment) has been previously discussed in different studies. For instance, Rao, Coelli, and Alauddin (2004) contend that it is not just inadequate employment that breeds poverty, but rather the absence of decent and productive employment. Accordingly, Krongkaew, Chamnivickorn, and Nitithanprapas (2006) add that employment is a very important link between economic growth and poverty because the quantity and quality of employment of the poor indicate how growth in the economy is translated into income increase of the poor.

Similarly, employment is seen as the main channel through which a greater proportion of the population benefits from the proceeds of economic growth (Heintz, 2004). However, Khan (2005), in an earlier study, maintains that growth in employment can influence the determinants of change in poverty. He argues that an increase in the growth of the economy can stimulate the demand for labor which will eventually increase employment and income of the poor and reduce poverty. It is perhaps the reason why Heintz (2004) insists that employment must be a major objective of economic policy because employment is the connecting link between economic growth and poverty reduction.

However, Dalis (2014) contends that the provision of employment opportunities for the poor is not only about self-reliance but also about perpetuation in income generation to enable them to improve their

livelihood. In addition, Alkire (2007) states that the major source of income for most families is employment and that having a good job is a great opportunity for ejection out of poverty. On the other hand, Nwagwu (2014) reports that there is a direct connection between unemployment and poverty to security challenges in Nigeria because a high rate of unemployment weakens personal incomes and worsens social vices in the country.

Review of Youth Development on Poverty

Unfortunately, most of the perpetrators of the social vices in Nigeria are the youth. This is why it becomes imperative to include youth development in this study. According to Banks (2015), the concept of youth is seen as a period of transition in which young people try to meet the stage of adulthood by getting jobs, raising a family, and being recognized as full and productive members of society. However, in the words of Ayllón (2015), it is part of the experience of being a youth to have little or no income; because it is a stage where individuals invest in their future, particularly through acquiring education or experience in the labor market.

Consequently, SIDA (2005) insists that the World Programme of Action for Youth (WPAY) should act as a guide and policy document that should provide the road map in identifying the priority areas for youth development, especially in education, employment, hunger, and poverty, and active involvement of the youths in the activities and decision-making processes of the community.

The condition of poor youths globally is pathetic. Baxter, Chapman, Dejaeghere, Pekol, and Weiss (2014) observe that most youths that find themselves in poverty situation are confronted with a number of challenges that module their behavior on decisions to save, particularly as they lack the courage and resilience to cope with the costs of unexpected illness, injury, and important events of life like marriage, childbirth, or funeral expenses.

In summary, poverty, and unemployment, according to Olotu, Salami, and Akeremale (2015), have continued to remain the major challenges to development in Nigeria. However, youth empowerment, comprehensive business education, the mobilization of initial capital, and agricultural businesses can be very useful in expanding entrepreneurship geared toward poverty reduction (Musa, Ainuddin, Lee, Abdullah, & Wahid, 2016).

Idike et al. (2021) said that human capital and poverty reduction are viewed as the means and end for achieving the objectives of sustainable development (SD). They are equally the targets as they work together to create other objectives. However, the procedures and government commitment of the former cannot be separated from how the latter reacts to the overarching Sustainable Development Goals (SDGs). This emphasizes the importance of human capital (HC) in achieving the goals of reducing poverty and ensuring food security. This research evaluates the usage and practice of HC development. We employed focus groups and in-depth interviews to provide our conclusions with a solid empirical foundation. This analysis shows that the Ebonyi state government's empowerment program has persistently ignored the most important HC factor.

In Nigeria between 1980 and 2016, Saka and Olanipekun (2021) investigated the part that human capital plays in the link between the industrialization process and growth. The theoretical foundation is based on a contemporary growth theory that may be traced back to Lucas (1988), focusing on the contribution of human capital to growth. We end up with two simultaneous equation models as a consequence of certain changes, one of which has grown as a dependent variable and the other of which has industrialization as a dependent variable. In order to explain the growth and industrialization process, human capital is divided into male and female life expectancies, male and female literacy rates, and other control variables. The Two-Stage Least Squares method, which was used, often produces the desired result for the two model estimations. It has been shown that the industrialization process is important for economic growth, and that male literacy rates can enhance growth by assisting the industrial process. Similarly, industrialization is made easier by consistent growth, and this process also benefits from factors related to human capital. The first step in solving Nigeria's challenges with capacity building and industrialization would be understanding how the Nigerian state functions.

Research methodology

The formulated model employed in this research is the ordinary least square (OLS) method of multiple regression analysis. This shall be used to estimate the model to be specified in constructing the economic models. The significant variables affecting economic growth as defined:

Misery index =f (EDU, LEXP, UNEMP, HDI)

Misery index_t = $\beta_0 + \beta_1 \text{EDU}_t + \beta_2 \text{LEXP}_t + \beta_3 \text{UNEMP}_t + \beta_4 \text{HDI}_t + \mu_t$

Where:

Misery Index_t = Poverty Rate

EDU = Government Expenditure on Education

LEXP = Life Expectancy

UNEMP = Unemployment Rate

HDI = Human Development Index

β_0 = Constant

β_{1-4} = Estimation parameters

μ = stochastic error term

The model has the following a priori expectations

$\beta_0 > 0, \beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0$

Table 1. Description of Variables (Source: authors' contribution)

S/N	Variables	Description	Data Source
1.	Misery Index	It served as a dependent variable; it is an informal measure of the state of an economy generated by adding together its rate of inflation and its rate of unemployment.	Central Bank of Nigeria Statistical Bulletin (2020)
2.	EDU	It served as an independent variable used to account for the capital expenditure of the government on the educational sector to boost the quality of its citizens.	Central Bank of Nigeria Statistical Bulletin (2020)
3.	LEXP	It is an independent variable used to account for the number of years a person can expect to live.	Central Bank of Nigeria Statistical Bulletin (2020)
4	UNEMP	Unemployment rate. This measures the share of workers in the labor force who do not currently have a job but are actively looking for work. It is also used as an independent variable.	Central Bank of Nigeria Statistical Bulletin (2020)
5	HDI	This is a summary composite measure of a country's average achievements in three basic aspects of human development (health, knowledge, and standard of living).	World Development Indicators (2020)

Sources and Types of Data

The secondary data would be obtained from the Central Bank of Nigeria (CBN) and the World Bank Development Index (2020) with respect to transport infrastructure and trade performance in Nigeria. The range of data is between 1990 -2020.

Estimation Technique

Unit Root Test

The concept of stationarity and non-stationarity of time series depends on the absence or presence of trends in the time series data. According to Oyeniyi (2012), a spurious regression occurs when a non-stationary time series variable is regressed on one or more non-stationary time series variable(s) that would make such results invalid and hence cannot be used for forecasting. Therefore, this study will adopt the Augmented Dickey-Fuller (ADF) unit root test to verify the unit root property of the series. All the variables in the models will be subjected to the ADF test.

Bound Test for Cointegration

The long-run and short-run relationship between the dependent and independent variables are estimated using the bounds testing or Autoregressive Distributed Lag (ARDL) cointegration procedure developed by Pesaran, Shin, and Smith (2001). The bound test is used when there is an admixture of time series variables with different orders of integration, unlike the Johansen approach, where all the variables are expected to be stationary at the first difference, that is, $I(1)$. According to Kakare et al. (2010), as cited in Oyeniran, David, and Ajayi (2015), the ARDL procedure is relatively more efficient in small or finite sample data sizes. However, it is not efficient in the presence of variables that are stationary at the second difference. Since the unit root properties of the time series variable have been established earlier in the section, therefore, the ARDL model requires testing for the existence of a long-run relationship between the misery index and all other explanatory variables within a univariate framework. Following Pesaran et al. (2001) and adopting the bound test procedure by modeling the long-run as a general vector autoregressive (VAR) model, the presence of cointegration or long-run relationship among the variables is determined by estimating the equation 6 above using the ordinary least squares (OLS) technique and obtaining the value of F-test for the joint significance of the coefficients of the lagged levels of the variables. i.e.:

$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ (There is no long-run relationship)

$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$ (There is a long-run relationship)

The calculated F-statistic will be compared with the critical value tabulated by Pesaran et al., (2001). If the calculated F-statistic exceeds the upper critical value, the null hypothesis of no long-run relationship can be rejected regardless of whether the underplaying order of integration of the variables is zero or one (Pesaran et al., 2001).

Long-run Autoregressive Distributed Lag (ARDL) Model

The order of lag, i.e., ARDL (q_1, q_2, q_3, q_4, q_5), will be selected on the basis of Akaike Information Criteria (AIC). All variables are as previously defined.

Short-run ARDL model or Error Correction Model (ECM)

The ARDL bound procedure further requires obtaining the short-run dynamic parameters by estimating an error correction model associated with the long-run estimates. Therefore, transforming equation 8 above will yield the introduction of the first difference (Δ) and lag of error term by one period to measure the rate of adjustment in the equilibrium of the model. The lag of error term by one period is the error

correction mechanism (ECM) that measures the rate of adjustment of the variables from the long-run to the short-run (David, Noah & Agbalajobi, 2016).

Diagnostic Test

Gujarati (2004) argues that diagnostic tests should be performed so that the model finally chosen is a good model, in the sense that the estimated models have the right signs that are statistically significant on the basis of " T " and " F " statistics. In this regard, the study will employ the Histogram and Normality tests, serial correlation LM test, and Heteroskedasticity test as diagnostic tests.

Research results

Augmented Dickey-Fuller Test

As described in the previous chapter, the stationarity test of the time series data utilized in the model using the Augmented Dickey-Fuller (ADF) test yielded the following results:

Table 2. ADF result (Source: Author's computation from E-view)

Variable	ADF test statistic (level)	Critical value (level)	ADF test statistic (first difference)	Critical value (first diff)	Probability (5%)	Order of integration
PR	-2.136856	-2.963972	-4.598110	-2.967767	0.0010	I(1)
EDU	1.286842	-2.963972	-4.572020	-2.967767	0.0011	I(1)
LEXP	-4.567603	-2.967767	-	-	-	I(0)
UNEMP	0.435683	-2.963972	-4.889314	-2.967767	0.0005	I(1)
HDI	0.454763	-2.963972	-6.221207	-2.967767	0.0000	I(1)

The Augmented Dickey-Fuller Statistic test for unit root found all variables to be stationary at the first difference, with the exception of LEXP, which is stationary at level. The bound cointegration test is required because all variables were integrated at the first difference and at levels I(1) and I(0), respectively.

Determination of Lags

In order to decide the best lag to adopt, this study used the Hannan-Quinn selection criterion. The results are demonstrated in Figure 1 below.

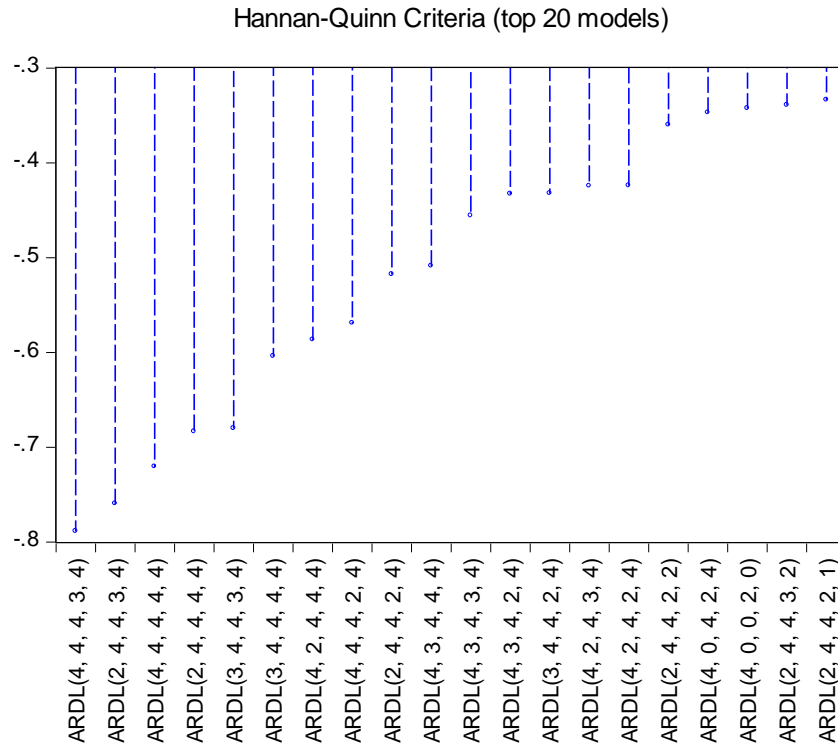


Fig.1. Determining the Number of Lag Lengths (Source: Author's computation from E-view, 2022)

The lag length is shown in Figure 1 using the Hannan-Quinn Criterion (HQC). The Hannan-Quinn Criterion is a measure of the statistical model's quality of fit and is frequently used as a requirement for model selection among a finite collection of models. It is used to indicate the best lag selection.

Bound test for cointegration

The results of the bound testing approach for the long-run co-integrating association in relation to the variables in the model are presented in Table 3 below.

Table 3. ARDL Bounds Test (Source: Author's Computation (2022))

Null Hypothesis: No long-run relationship exists

Test Statistic	Value	K
F-statistic	5.835474	4
Significance	I(0) Bound	I(1) Bound
10%	2.45	3.52
5%	2.86	4.01
1%	3.74	5.06

The model estimated F-statistics (5.835474) demonstrates that when it is above the I(0) and I(1) critical values at 10%, 5%, and 1%, suggesting a long-run relationship choice. As a consequence, we can put

together a long-term link between the variables. As a result, we may deduce that the dependent variable and the independent factors have a long-term connection.

Presentation of ARDL Model Results

Having confirmed the presence of a long-run relationship between the dependent and independent variables, the long-run parameters were estimated using the ARDL method. The nexus between the dependent and independent variables is calculated using the ARDL (autoregressive distributed lag) technique, and the long-run findings as shown. The Akaike Info Criteria were used to choose the lag duration for both the long-run and short-run models (AIC).

Table 4. Estimated long-run coefficients using the ARDL approach(Source: Author's computation, 2022)

Dependent variable : (PR)				
Independent variables	Coefficients	T-statistics	Prob.	Decision
EDU	-0.115749	-2.778110	0.0141	Significant @5%
LEXP	1.419646	2.017457	0.0619	Significant @10%
UNEMP	2.955437	1.554358	0.1409	Insignificant
HDI	-7.507749	-1.569977	0.1373	Insignificant
CONSTANT	-3.051029	-2.105793	0.0525	Significant @5%

Table 5. Estimated short-run coefficients using the ARDL approach (Source: Author's computation, 2022)

Dependent variable : $\Delta(\text{PR})$				
Independent variables	Coefficients	T-statistics	Prob.	Decision
$\Delta(\text{PR}(-1))$	0.486371	2.776883	0.0141	Significant@5%
$\Delta(\text{PR}(-2))$	0.369511	2.436967	0.0277	Significant@5%
$\Delta(\text{PR}(-3))$	0.504865	3.329961	0.0046	Significant@5%
$\Delta(\text{EDU})$	-0.130592	-2.873692	0.0116	Significant@5%
$\Delta(\text{LEXP})$	-4.038063	-2.227941	0.0416	Significant@5%
$\Delta(\text{UNEMP})$	3.334436	1.623350	0.1253	Insignificant
$\Delta(\text{HDI})$	3.033644	0.997993	0.3341	Insignificant
$\Delta(\text{HDI}(-1))$	4.730286	1.323614	0.2055	Insignificant
ECM(-1)	-1.128238	-5.604877	0.0001	Significant@5%

Interpretation of the ARDL model's short- and long-term results

The short-run analysis maintains that the estimated coefficient of the lagged error correction term ECM (-1) has the expected non-increasing signs. This shows that the speed of adjustment is relatively low, and it has only about 1.12% of the disequilibrium within the model in the previous year, which is subsequently corrected in the current year. This result conforms to the a priori expectation. The result of the error correction term gives strong evidence that there is indeed a long-run equilibrium association with regard to the exogenous variables (EDU, LEXP, UNEMP, HDI) and Misery Index, which is a proxy of the poverty rate.

With the exception of education and life expectancy, all variables in the short-run equilibrium maintain their respective signs in the long-run equilibrium. The lagged values of the poverty rate are closely

connected to itself, with positive elasticity impacts of 0.48%, 0.37%, and 0.50%, respectively. This suggests that a 1% increase in PR would result in a 0.48, 0.37%, or 0.50% rise in the current value of the poverty rate when all other factors are held constant. This, however, is consistent with the variables on the a priori expectation.

Education is shown to be adversely associated with the poverty rate with a value of -0.13, indicating that a percentage increase in education, leaving all other factors equal, could result in a 0.13 percent decline in the country's poverty rate in the short run. This outcome is in tandem with the a priori assumption that education is adversely associated with the poverty rate. This, however, is in line with the findings of Aduke (2012) and Nwosu (2014).

Life Expectancy and poverty rate are negatively associated when life expectancy has a negative sign. This suggests that a percentage rise in life expectancy will result in a -4.04 percent decrease in poverty in the short run. This sign corresponds to the a priori expectation.

In Nigeria, as seen in Table 4, unemployment and poverty rates have a non-decreasing connection. This means that a 1% increase in unemployment could result in an approximately 3.33% rise in the poverty rate. UNEMP findings are consistent with Gobose et al. (2015) and Khan's (2015) findings. This supports the variable's expected value.

In addition, Human Development Index was discovered to have a positive influence on the poverty rate as a result of the findings. This indicates that a 1% rise in the HDI, with all other factors held constant, may result in a 3.03% rise in the poverty rate. This result is consistent with the a priori requirements.

The summary of the a priori expectation of the short-run model is given in Table 6 below:

Table 6. Summary of the a priori expectation in the short-run model (Source: Author's Computation, 2022)

Variables	Expected sign	Observed sign	Remark
$\Delta(\text{PR})$	+	+	Conform
$\Delta(\text{EDU})$	-	-	Conform
$\Delta(\text{LEXP})$	-	-	Conform
$\Delta(\text{UNEMP})$	+	+	Conform
$\Delta(\text{HDI})$	+	+	Conform
$\text{ECM}(-1)$	-	-	Conform

Based on the conclusions of the ARDL model, human resource development has a statistically significant and statistically significant negative relationship with the poverty rate in the long and short runs, respectively. This could be due to the fact that most of the major variables used to capture human resource development are statistically significant because of their corresponding p-value, which is less than 0.05. This means that a rise in human resource development will have a higher negative impact on the poverty rate in the short run than in the long run, ceteris paribus.

Furthermore, education was shown to have a significant negative impact of -0.11 percent and -0.13 percent in the long and short run, respectively. This indicates that an increase in education may contribute to a 0.11 percent decrease in the poverty rate in the long run and a -0.13 percent fall in the poverty rate in the short run, ceteris paribus. This is because education is significant in both periods.

The life expectancy was also found to be positive and insignificant in the long run, negative and significant in the short run, with a long-run influence of 1.42 and a short-run effect of about -4.04. This shows that life expectancy is more effective in the short run than in the long run.

Considering the studies of Nwosu (2014), Aduke (2012), Knight et al. (2010), and Rao et al. (2004), human resource development in Nigeria was represented using key variables: education, life expectancy,

unemployment, and human development index. This study does not depart much from the previous empirical studies on the factors utilized to measure globalization.

The findings of this study were consistent with Gobos et al. (2015), who found a positive relationship between unemployment and poverty rate. This explains why, contrary to expectations, the impact of human resource development on Nigerian poverty reduction has been non-decreasing which is in line with the result of these findings. The findings of Knight et al. (2010) also complement the results of this study, which indicates that education has a negative impact on Nigeria's long-term misery index performance.

Conclusions

Based on the available statistics, it can be stated that education has a negative and significant impact on Nigeria's poverty incidence, whereas life expectancy has a positive but insignificant impact. The unemployment rate has been proven to have an insignificant positive impact on poverty incidence. As a result, the study shows that human resource development has an insignificant but non-decreasing effect on poverty incidence in Nigeria, which invariably could lead to more human resource development and hence, increase poverty incidence in Nigeria.

Given the empirical nature of this study and based on the findings and conclusions therefrom, the following recommendations are proffered.

The study findings suggest that, since poverty is unavoidable and thus leads to underdevelopment, governments should design and execute policies and programs targeted at promoting or strengthening the welfare of the masses, as well as creating job opportunities, in order to close the gap between the affluent and the poor. More so, the findings of this study show that education has a negative yet considerable influence on poverty incidence. As a result, because no nation can develop in isolation, the government should take appropriate measures to control the education sector and decrease the amount of "brain drain" in a way that does not harm the Nigerian economy.

Limitations of Study

- This work is limited to 2020 due to the lack of published data to date.
- This study is also limited due to a lack of data on other variables of interest that may capture human resource development and poverty incidence better.
- This study did not employ other econometric techniques to check for the robustness of the result.

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THE MATERIALITY CHALLENGE OF ESG RATINGS

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Abstract

Research purpose. The ESG literature supports a positive correlation between a firm's ESG performance and its financial performance; however, the details of this relationship are ambiguous, which has led to conflicting results in the literature. This article asserts that this ambiguity is largely related to the fact that ESG studies rarely consider the important issue of materiality. This article is an expanded replication of analysis by Williams & Apollonio (2022), a study that called for deeper analysis of both materiality and the causal link between ESG ratings and financial performance.

Design / Methodology / Approach. This methodology calculates Pearson Correlation coefficients between Bloomberg ESG scores and abnormal returns for S&P 500 firms from 2020 to 2022 after controlling for the material issue of GICS sectors.

Findings. The results show no relationship between ESG scores and abnormal returns, and the conclusion is that controlling for GICS sectors is not the methodology that will clarify the presumed positive correlation between ESG performance and financial performance.

Originality / Value / Practical implications. This study is one of the few that addresses materiality in ESG ratings. The finding that controlling for GICS sectors does not sufficiently control for materiality is a significant building block for future researchers. This article suggests that more granular categorization of sub-industries using a larger sample than the S&P 500 is likely to be useful future research.

Keywords: ESG Materiality; Abnormal Returns; Industry Classification.

JEL codes: G11.

Introduction

Investing in a company based on an assessment of the environmental, social, and governance (ESG) risks that that company faces has become hugely popular in recent years. In 2020, there were \$35.3 Trillion of worldwide assets that were managed based on ESG requirements or factors; this was almost 40% of the world's managed assets in 2020, and it was an increase of 55% from 2016 (GSIA, 2021). Socially conscious investors have demanded these considerations (Zumante & Lace, 2021), and investment managers have found that considering these risks is consistent with traditional valuation (van Duuren et al., 2016); in other words, ESG investing is profitable.

However, there have been a number of concerns and criticisms in the ESG investing space. The lack of standardization (Whelan et al., 2021) of ESG ratings and the subjectivity (Wilhelmsen & Woods, 2021) involved are important concerns that have troubled empirical researchers. Different rating agencies might give the same company different ESG scores based on subjective agency criteria; furthermore, firms must voluntarily disclose ESG ratings in order to receive ESG ratings from an agency because there are no legal requirements for companies to provide standardized ESG information. This, of course, leads to a voluntary disclosure bias and has been associated with the practice of greenwashing, which involves, among other things, a company's attempt to benefit from the popularity of ESG investing by misleading consumers and investors about the environmental risks the company faces (Hayes, 2022a).

Another difficult challenge is the question of materiality. Which ESG factors are materially relevant to firms of different sizes, different products, different industries, or different operating models? In assessing the relationship between ESG ratings and financial performance, there is a two-fold challenge

of dealing with materiality issues: First, there is the question of which ESG metrics are financially relevant to a specific firm in a specific industry. Second, there is the question of exactly how that ESG metric translates into earnings and/or stock returns for a specific firm in a specific industry. The first question deals with the characteristics and risks of each industry, and the second question deals with how investors quantify the value associated with good or bad management of those risks (the second question could also deal with earnings and profitability, but researchers have been more likely to study valuation and stock returns). The research in this article attempts to address both questions by studying the relationship between abnormal returns and ESG ratings by controlling for the Global Industry Classification Standard (GICS) sector classification. Only a small number of researchers have attempted to address the problem of materiality, and this article will attempt to fill that gap. This article is an expanded replication of Williams & Apollonio (2022); that article noted the confusing issue of materiality and called for future research that might demonstrate how ESG performance drives financial performance and why confusion remains in the literature about the link between ESG performance and financial performance.

This article studies each of the 11 GICS sectors separately and runs regressions between abnormal returns and various ESG metrics. The ESG metrics are the individual current scores, the total current ESG score, the two-year changes in each individual score, and the two-year change in the total score. Materiality should vary by sector. For example, a company in the energy sector is likely to face different environmental risks than a company in the information technology sector. However, if both companies are successfully managing their different risks respectively, then both companies might receive the same high environmental ratings from ESG rating agencies. But the high environmental rating for the energy company and the high rating for the information technology company sends different signals to investors, so the valuation and stock returns could be different for the two companies with the same ESG ratings. Thus, academic researchers who run regressions of all firms with ESG scores are likely to find no correlation between environmental scores and abnormal returns, and these researchers might inaccurately conclude that environmental scores are not relevant to market returns. However, the researchers may have made a mistake by failing to consider that the high environmental score is more material for the energy company but less material for the information technology company. This article attempts to address this potential error in methodology by controlling for GICS sector classification. The risks that are financially material are likely to be similar within sectors, and the valuation implications of those risks are also likely to be similar within sectors.

Ultimately, this article does not find meaningful associations after controlling for sector classification. Thus, there are two important conclusions relevant to the future of ESG research. One, classifying by sector may not be the answer to understanding the materiality of ESG scoring as it relates to financial performance, and researchers should look elsewhere for control factors – such as company size or more granular classifications like the GICS industry or sub-industry. Two, the methodology in this article may not have been properly specified, and future researchers could adjust sample sizes, empirical tests, or other issues; nevertheless, addressing sector differences is an important step in ESG research, and this article will clearly articulate the steps in this process. The remainder of this article reviews the ESG literature, and explains the study methodology with the associated results, conclusions, limitations, and future research opportunities.

Literature Review

This literature review shows that research in the ESG space decidedly points to a positive correlation between ESG ratings and financial performance, and these findings likely contributed to the explosion in ESG investing. However, this positive relationship is clouded with ambiguity and divergent study results. The key finding of Williams & Apollonio (2022) was that researchers, as a whole, do not agree on exactly how higher ESG ratings are causing better financial performance. Different research methodologies, voluntary ESG disclosures, and subjectively determined ESG ratings are some of the main drivers that have contributed to these divergent research results. The gap in the literature identified here is a lack of research to explain what controls are necessary for researchers to clearly identify and understand the relationship between ESG performance and financial performance.

ESG Ratings Drive Financial Performance

A huge meta-study by Whelan et al. (2021) examines over 1,000 studies of ESG investing conducted between 2015 and 2020 and finds that most of the results show positive or neutral relationships between ESG ratings and financial performance. Whelan et al. (2021) also note that studies before 2015 pointed toward positive correlations between ESG scores and financial performance, and Whelan et al. (2021) credit those results with contributing to the rise in ESG investing. A highly cited individual study by Khan et al. (2016) demonstrated exciting ESG investing results by showing that investors could have earned high returns by investing in firms with strong, material ESG scores; King & Pucker (2022) acknowledge this study as feeding the ESG investing frenzy, and Berchicci & King (2022) note that this study is frequently cited by ESG researchers.

Williams & Apollonio (2022) reviewed the ESG literature, found an overall consensus of positive correlations between ESG scores and financial performance, and noted a number of important and supporting studies. Engelhardt et al. (2021), Ademi & Klungseth (2022), and Gregory (2022) all find positive correlations between ESG ratings and financial performance (as cited in Williams & Apollonio, 2022). Notably, Ademi & Klungseth (2022), and Gregory (2022) use S&P 500 data (as cited in Williams & Apollonio, 2022), which supports the assertion that there are positive correlations in S&P 500 data even though this article and Williams & Apollonio (2022) both found ambiguous results.

Unclear Causation between ESG Ratings and Financial Performance

While the consensus in the literature points to a positive correlation between ESG scores and financial performance, several studies have found different results. A notable study by Alves et al. (2022) assesses more than 9,000 firms over 20 years in 46 countries using several control variables. The study finds no substantial evidence of a relationship between ESG scores and stock returns. Wilhelmsen & Woods (2021) found that ESG ratings and abnormal returns are negatively correlated; those researchers do not call the results a statistical anomaly; instead, they assert that this is consistent with risk-return asset management theory because riskier firms with lower ESG scores should yield higher returns. Hvidkjaer (2017) illustrates the ambiguity in the ESG literature by studying many different time periods; the study finds a positive correlation in one time period and no correlation in another period.

In addition to findings that refute the positive correlation, many studies point out problems with ESG metrics that make rigorous empirical testing difficult: inconsistent terminology, unstandardized and subjective ESG scores, and materiality problems are commonly mentioned challenges. Whelan et al. (2021) point to inconsistent terminology as a key problem in the ESG literature. Meuer et al. (2019) found 33 different definitions of corporate sustainability (as cited in Whelan et al., 2021), and the different definitions are often lumped together by different researchers, which creates confusion and noise in the literature (Douglas et al., 2017 as cited in Whelan et al., 2021). Whelan et al. (2021) comment on the unstandardized, subjective way that different ratings agencies issue ESG ratings, which would understandably lead to different conclusions. In addition to using unstandardized ESG data with inconsistent terminology, Whelan et al. (2021) note that there are different approaches to ESG investing (with different risks and return priorities), such as negative screening, socially responsible investing, ESG momentum, ESG integration, and decarbonizing. Whelan et al. (2021) note that comparing the results of different strategies without recognizing the difference leads to faulty conclusions. Other studies such as King & Pucker (2022), Berg et al. (2021), Gibson et al. (2021), and Christiansen et al. (2020) all note problems with unstandardized or subjective ESG ratings (as cited in Williams & Apollonio, 2022).

The Materiality Gap in the ESG Literature

In addition to the challenges of inconsistent terminology and unstandardized ESG ratings, the challenge of materiality is mentioned by a number of studies, and that issue is the challenge addressed in this article. The study mentioned earlier by Khan et al. (2016) asserts that previous ESG studies did not find correlations between ESG ratings and stock performance because those studies did not consider materiality, and Khan et al. (2016) notes that that study is the first to incorporate materiality into ESG research. Khan et al. (2016) examine guidance on materiality from the Sustainability Accounting Standards Board (SASB) and develop materiality scores for each firm. Khan et al. (2016) claim that this

understanding of materiality is why the study results show a clear positive link between ESG ratings and financial performance. A later study by Khan (2019) also carefully examines materiality and again finds that investing in firms with high and material ESG scores yields high stock returns. In addition to Khan et al. (2016) and Khan (2019), Whelan et al. (2021) discussed above also note that researchers often fail to consider which ESG ratings are material to each company.

The problem with ignoring materiality is clear, but the solution is less evident. As mentioned, some ESG ratings are relevant to a firm, and some are not. For example, an environmental rating may be material for an oil company but immaterial for a technology company. But reliable materiality information can be challenging to find and problematic to use in analyses. Research by Berchicci & King (2022) criticizes the materiality calculation of Khan et al. (2016). Berchicci & King (2022) asserts that the flawed materiality calculation by Khan et al. (2016) erroneously led to a positive correlation, and in fact, there is not necessarily any added value from ESG investing. A related article by King & Pucker (2022) explains that the positive correlation in Khan et al. (2016) disappears if the faulty materiality calculation is removed.

The Bloomberg ESG ratings that will be used in this study consider materiality by rating different industries in different ways based on Bloomberg's assessment of what is financially material to each industry (Bloomberg Professional Services, 2022). But this does not solve the problem of correlating ESG scores with abnormal returns. As discussed in the introduction, the materiality problem is two-fold. The first issue seems to be addressed if Bloomberg rates firms based on financial material issues, but investors may see different financial valuation implications for two firms in different industries even though the firms have the same Bloomberg ESG scores, so further controls for materiality are necessary.

The need for studies that consider materiality represents a gap in the literature. The literature points to a positive correlation, but there have been numerous unexplained ambiguous results. Williams & Apollonio (2022) referred to this as the causation dilemma in ESG research; that study did not question the positive correlation, but it highlighted the confusion around how (and if) ESG actions and circumstances were causing strong financial performance. Very few studies have attempted to address materiality and those that have been subject to criticism. This article will attempt to fill this gap by testing the correlation among firms that are in the same sector. This analysis could go further to test firms that are similar in all ways except for ESG ratings, but this article will take an underpinning step in this direction to help researchers understand the importance of materiality in the correlation between ESG ratings and financial performance.

Research Methodology

This article is an expanded replication of Williams & Apollonio (2022) which measures correlations between a firm's abnormal returns and its ESG scores. This article goes further by controlling for GICS sector classification. The firms used in this study are S&P 500 firms, and the abnormal return performance is measured from May 2020 to May 2022. Abnormal returns are calculated using the Capital Asset Pricing Model (CAPM), which calculates the excess return over the expected return based on the risk-free rate, the overall performance of the market, and the firm's correlation (beta) with the overall market (Kenton, 2022a).

The ESG ratings and abnormal return performance (including market rates and betas) are sourced from Bloomberg. Bloomberg is considered by investors to be one of the most dependable providers of global market data (Kolakowski, 2021). Bloomberg ESG scores are compiled from company-disclosed data; Bloomberg ensures that the self-reported metrics are relevant to 80% or more of a firm's workforce and operational imprint (Bloomberg Professional Services, n.d.b). The mechanics of Bloomberg ESG scores are based on elaborate, proprietary analyses that specifically consider the financial materiality of ESG risks for each industry (Bloomberg Professional Services, n.d.a). As discussed, while Bloomberg considers the financial materiality of risks, this materiality does not necessarily mean that the financial risks equate equally to abnormal returns in different industries. Bloomberg examines company information such as annual filings, sustainability reports, and company websites; Bloomberg attempts only to include data that are comparable across similar companies and comprehensive enough to

illuminate the relevant financial risk (Bloomberg Professional Services, n.d.a). Bloomberg's methodology identifies priorities based on the industry in order to formulate scoring that is industry-specific (Bloomberg Professional Services, n.d.a). Bloomberg recognizes the role of corporate governance in protecting shareholders from risk and identifying profitable opportunities; thus, Bloomberg governance scores evaluate issues such as shareholder rights, executive compensation, audit touch, and board composition (Bloomberg Professional Services, n.d.c).

This study calculates Pearson's Correlation coefficients, which measure the direction and strength of a linear relationship between two variables (Freed et al., 2014), and are the most commonly used correlation coefficients in scholarly research (Cozby & Bates, 2015). Pearson's Correlation coefficient calculates a p-value that measures the likelihood of randomly calculating the linear relationship from the sample data if there is truly no relationship in the population data (Freed et al., 2014). P-values below 5% or 1% (significance levels) are generally considered statistically significant results (Freed et al., 2014).

The Global Industry Classification Standard (GICS) defines firms by sector, industry group, industry, and sub-industry, and there are 11, 24, 69, and 158 of each, respectively (Hayes, 2022b). The GICS is a respected method to help investors identify a firm's competitors in the same line of business (Hayes, 2022b). For this research, the most granular distinction of sub-industries would be preferable; ideally, this study would compare firms that are similar in all ways except ESG ratings. However, the resulting small sample sizes of comparing 158 categories were not sufficient for sound empirical testing. Thus, this study used the 11 sector classifications with the goal of adequate sample sizes for each sector category; furthermore, the firms in each sector category were considered to be reasonably comparable because of the similarities of firms in the S&P 500. The Standard & Poor's 500 Index (S&P 500) is an index of leading US public companies that investors regard as an accurate gauge of global stocks (Kenton, 2022b).

The three hypotheses in this study are the same as the hypotheses of Williams & Apollonio (2022); the difference is that the data will first be categorized by GICS classification.

Hypothesis 1:

- H_01 : *Correlation (R) of Abnormal Returns vs. Current ESG Score = 0*
- H_a1 : *Correlation (R) of Abnormal Returns vs. Current ESG Score $\neq 0$*

The abnormal returns are calculated as described above using the Capital Asset Pricing Model (CAPM) to determine the excess return beyond the expected return as calculated based on risk-free rates, market performance, and a given security's relationship with the overall market. The current ESG score includes three separate ESG scores (environmental, social, and governance) issued by Bloomberg as of May 2022 and one calculated summation score of all three scores added together. Hypothesis 1 tests the relationship between a firm's ESG performance and its financial performance.

Hypothesis 2:

- H_02 : *Correlation (R) of Abnormal Returns vs. Changes in ESG Scores = 0*
- H_a2 : *Correlation (R) of Abnormal Returns vs. Changes in ESG Score $\neq 0$*

For hypothesis 2, the abnormal returns and the ESG scores are calculated as above in hypothesis 1. The change in ESG score is calculated from May 2020 to May 2022. ESG scores from both time periods were sourced from Bloomberg. Hypothesis 2 tests the relationship between changes in a firm's ESG performance and its financial performance.

Hypothesis 3:

- H_03 : *Abnormal Returns of Firms with ESG Ratings are Equal to the
Abnormal Returns of Firms Without Complete ESG Ratings*
- H_a3 : *Abnormal Returns of Firms with ESG Ratings are not Equal to the
Abnormal Returns of Firms Without Complete ESG Ratings*

For hypothesis 3, the abnormal returns are calculated as in hypotheses 1 & 2. Firms with complete ratings are defined as firms with all three Bloomberg ESG ratings: environmental, social, and governance. Hypothesis 3 tests the relationship between receiving full Bloomberg ESG ratings and financial performance.

Research results

Table 1. Descriptive statistics

Descriptive Statistics for ESG Study Data (S&P Companies 2020 to 2022)

	Firms	Max	Min	Mean
Total S&P 500 Firms	501			
Environmental Rating	281	7.91	0	3.6931
Social Rating	281	9.57	0.69	3.7497
Governance Rating	484	8.69	4.08	6.6859
Firms with Complete Ratings	269			
Environmental Change	277	5.8	-3.06	0.7949
Social Change	277	7.68	-1.58	0.9704
Governance Change	468	1.79	-1.81	0.1048
Firms with Complete Change Ratings	259			
Abnormal Returns	501	4.27	-1.03	0.1638

Table 1 shows the available ESG data. Of the 501 S&P 500 firms, 269 have complete current ESG data and 259 have complete current and past ESG data, so the total change in ESG scores can be calculated for those 259 firms. Notably, there are 468 firms with current and past governance data, so analysis of changes in governance scores could be a rich area of analysis. The abnormal returns over the time period are given for all 501 firms, and the returns range from 427% to negative 103%.

Table 2. Average abnormal return

Average Abnormal Return for Firms with Complete Current ESG Ratings and Firms without Complete Current ESG Ratings by Sector

Sector	Total Firms in Sector	Percent of Total	With Complete Current Ratings			Without Complete Current Ratings			Mean Difference
			Mean Return	N	Percent of Total	Mean Return	N	Percent of Total	
Energy	21	4.2%	1.1775	20	7.4%	2.8584	1	0.4%	-1.6809
Material	28	5.6%	0.6765	24	8.9%	0.2487	4	1.7%	0.4278
Industrial	71	14.2%	0.1939	64	23.8%	0.0874	7	3.0%	0.1065
Consumer Discretionary	60	12.0%	0.0509	4	1.5%	0.1047	56	24.1%	-0.0538
Consumer Defensive	32	6.4%	-0.0326	29	10.8%	0.1976	3	1.3%	-0.2302
Health	64	12.8%	0.1445	1	0.4%	-0.0373	63	27.2%	0.1818
Financial	66	13.2%	-0.3076	5	1.9%	0.3031	61	26.3%	-0.6107
Information Technology	76	15.2%	0.0305	72	26.8%	-0.1496	4	1.7%	0.1801
Communications	25	5.0%	NA	0	0.0%	-0.1207	25	10.8%	NA
Utilities	28	5.6%	0.0332	25	9.3%	-0.0133	3	1.3%	0.0465
Real Estate	30	6.0%	0.1675	25	9.3%	0.2795	5	2.2%	-0.112
Total	501	100.0%	0.2129	269	100.0%	0.1069	232	100.0%	0.106

Table 2 shows the sector distribution of firms in the S&P 500, the details of firms in each sector with and without complete ESG ratings, the mean abnormal returns for the category, and the difference in mean returns for sector firms with complete ESG ratings and firms without complete ESG ratings. The percentage of total firms in the entire S&P 500 ranges from 4.2% for Energy firms to 15.2% for

Information Technology firms. The percentages are notably lopsided for a few sectors with complete ESG ratings; Industrials, Consumer Defensive, and Information Technology are notably larger percentages of the firms with complete ratings compared to the sector proportion in the S&P 500. These higher percentages may disproportionately influence the mean returns and correlations for firms with ratings. Similarly, the pool of firms without ratings may be disproportionately influenced by Consumer Discretionary, Health Care, Financials, and Communications. The other notable results in Table 2 are the mean difference of returns of firms with complete ratings and firms without complete ratings. Five of the sectors show higher mean abnormal returns for firms with complete ratings (Materials, Industrials, Health Care, Information Technology, and Utilities), and five of the sectors show higher mean returns for firms without complete ratings (Energy, Consumer Discretionary, Consumer Defensive, Financial, and Real Estate).

In addition to the noted instances of disproportionate representation noted above, there are a number of sectors that seem to be almost entirely with ESG scores or entirely without ESG scores. All or most of the firms in Energy, Industrials, Consumer Defensive, Information Technology, Utilities, and Real Estate firms have complete ESG information. Whereas all or most of the firms in Consumer Discretionary, Health Care, Financials, and Communications do not have complete ESG information. These sectors will likely influence the overall returns and correlations of firms with and without ESG information, respectively.

Table 3. Correlation between abnormal return and ESG ratings

Abnormal Return Correlated with Current ESG Ratings - Firms with Complete Data

	Correlation	P-Value	N
Environmental Rating	-0.051	0.401	269
Social Rating	0.134*	0.028	269
Governance Rating	0.072	0.239	269
Total Current ESG Rating	0.074	0.229	269

*Statistically significant at the 5% level

**Statistically significant at the 1% level

Table 3 shows the results of overall correlations between abnormal returns and ESG ratings. The results indicate that the social rating is the only rating correlated with abnormal returns, with a correlation coefficient of 0.134 and a p-value of 0.028. The environmental rating, the governance rating, and the total current rating are all uncorrelated with abnormal returns. The results in Table 3 are based on regressions of only firms with complete data. Williams & Apollonio (2022) found that including firms with incomplete data in the individual regressions had a negligible effect on the results, so those results are not included here. Additionally, including firms with incomplete data in the total current ESG rating correlations would not be meaningful because firms with incomplete data would arbitrarily be lower because of the missing data.

Table 4 and Table 6 are shown in Appendix A and Appendix B, respectively. Table 4 and Table 6 illustrate the key results of this study. Table 4 shows the correlation between abnormal returns and ESG scores when firms are separated by sector classification. Firms are further classified into firms with complete ratings and firms without complete ratings. As Table 4 illustrates, very few of the correlations are statistically significant. For firms with complete ratings, only two correlations are significant – the consumer defensive governance rating, and the information technology social rating. Both are moderately strong correlations (-0.381 & 0.274, respectively), and both are based on reasonable sample sizes (29 & 72, respectively). For the firms without complete ratings, there are three statistically significant correlations – industrials governance, real estate social, and real estate total. However, all three correlations are based on small sample sizes (6, 3, & 5, respectively).

Table 5. Correlation between abnormal return and ESG ratings (change)*Abnormal Return Correlated with ESG Ratings Change - 2020 to 2022*

	Correlation	P-Value	N
Environmental Rating Change	-0.112	0.072	259
Social Rating Change	-0.094	0.133	259
Governance Rating Change	-0.067	0.285	259
Total Current ESG Rating Change	-0.136*	0.028	259

*Statistically significant at the 5% level

**Statistically significant at the 1% level

Table 5 shows the results of overall correlations between abnormal returns and ESG rating changes. The total current ESG rating change is negatively correlated with abnormal returns, with a Pearson Correlation coefficient of -0.136. There are no other significant correlations between the change in ESG ratings and abnormal returns.

Table 6 (shown in Appendix B) shows the correlations between abnormal returns and changes in ESG ratings by industry and the availability of Bloomberg ESG ratings. For firms with complete ratings, there are three statistically significant correlations – consumer defensive governance change, information technology environmental change, and real estate governance change. The correlation coefficients are -0.431, -0.577, and -0.184, respectively. Moreover, the sample sizes are 29, 71, and 25, respectively. For the firms without complete ratings, none of the correlations are statistically significant.

Conclusions

In this research, none of the three null hypotheses is rejected. The overall results of Hypothesis 1 can be seen in Table 3: The social score is positively correlated with abnormal returns. However, the important tests in this article are those that control sector classification. Table 4 shows that when individual sectors are assessed, there are very few statistically significant correlations. There are only two significant correlations for firms with complete data and only three significant correlations for firms without complete data. Given a 5% significance level, it is presumable that 5% of the correlations could have been Type I Errors (rejecting the null hypothesis when no actual correlation exists (Freed et al., 2014)). Table 5 and Table 6 tell the same story for Hypothesis 2. Table 5 shows that there is an overall negative correlation between abnormal returns and the total change in ESG ratings from 2020 to 2022. However, Table 6 only shows three statistically significant correlations, which could very conceivably be Type I Errors. Table 2 demonstrates the results of Hypothesis 3. The mean difference in the last column of Table 2 indicates whether firms with or without ratings have higher returns. There is a difference seen in the total row of 10.6% higher for firms with complete ESG ratings, and this conclusion was explored in Williams & Apollonio (2022), but the difference disappears after controlling for sector classification. Five of the sectors have higher returns for firms with complete ESG ratings, five of the sectors have lower returns for firms with complete ESG ratings, and one sector is not comparable because there are no communications firms in the sample with complete ESG ratings. The even five-five split could not be any clearer of an indication that firms with ESG ratings do not have higher abnormal returns.

The key conclusion in this study is that after controlling for industry classification, there is not a statistically significant relationship between abnormal returns and ESG ratings. This study does not support the assertion that ESG scores are related to increased financial performance. However, this study is a valuable contribution to the literature as researchers attempt to understand how ESG ratings are related to financial performance. As demonstrated in the literature review, the clear consensus of the research points to a positive correlation between high ESG ratings and strong financial performance. Research by Williams & Apollonio (2022) supported the positive correlation but found numerous instances of ambiguity that warranted further research. This article takes an important step in that further research by suggesting that sector classification is not the answer to resolving the ambiguous relationship between financial performance and ESG ratings.

The secondary conclusion from this research is that firms with ESG information do not have higher abnormal returns when viewed by the industry. Williams & Apollonio (2022) found that firms with complete Bloomberg ESG ratings had higher abnormal returns than those without complete ESG ratings, but this study shows that the higher returns are not observed within industries. The findings of Williams & Apollonio (2022) could have been attributable to industry biases; for example, some industries are more likely to disclose ESG information, and those industries might have coincidentally performed better from 2020 to 2022. This is an inspiring finding that strengthens the power of ESG ratings. This study shows that ESG ratings are not meaningful just because they are given for a firm; investors did not reward companies with higher returns just because they disclosed ESG information and were issued ESG ratings. Instead, it seems more likely that investors carefully evaluate ESG scores and associate higher scores with higher company valuations (although this particular finding was not proven in this study).

This study shows a piece of the mosaic that illustrates the relationship between ESG scores and financial performance. The ESG literature strongly suggests that there is a positive correlation between high ESG ratings and strong financial performance; however, finding that relationship has been difficult for researchers who have struggled to understand the underlying cause of stronger financial performance. Is it that firms that disclose ESG information are stronger firms? Are ESG ratings a positive signal to investors? Do high ESG ratings indicate a fundamentally stronger company? Future research is necessary to answer these questions. This research showed that the answer is not any clearer after controlling for sector classification. A plethora of other controls could be assessed in future research, such as company size, investor base, company leverage, etc. The most logical extension of this article would be to control for the more granular industry group, industry, or sub-industry. This future research could be successful with large, homogenous sample sizes. The sample sizes in this article would not have been large enough to see correlations within 158 sub-industry classifications, so pools of data larger than the S&P 500 would be necessary. However, these larger samples must either be companies that are similar (except for ESG ratings), or the researchers must adequately control for these differences in order to determine the isolated effect of different ESG scores.

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Appendix A

Table 4 Correlations between Abnormal Returns and Current ESG Ratings

	Firms with Complete Ratings			Firms without Complete Ratings			Correlation Difference Absolute Value
	Pearson Correlation	P-Value	N	Pearson Correlation	P-Value	N	
Energy Environmental Rating	0.068	0.777	20	NA	NA	1	NA
Energy Social Rating	-0.079	0.741	20	NA	NA	1	NA
Energy Governance Rating	0.388	0.091	20	NA	NA	1	NA
Energy Total Current ESG Rating	0.8	0.739	20	NA	NA	1	NA
Materials Environmental Rating	-0.206	0.333	24	NA	NA	1	NA
Materials Social Rating	0.113	0.599	24	NA	NA	1	NA
Materials Governance Rating	0.316	0.132	24	0.458	0.697	3	-0.142
Materials Total Current ESG Rating	0.05	0.816	24	0.069	0.931	4	-0.019
Industrials Environmental Rating	-0.178	0.158	64	NA	NA	1	NA
Industrials Social Rating	0.023	0.857	64	NA	NA	1	NA
Industrials Governance Rating	-0.042	0.74	64	.851*	0.032	6	-0.809
Industrials Total Current ESG Rating	-0.088	0.489	64	0.659	0.108	7	-0.571
Consumer Discretionary Environmental Rating	0.251	0.749	4	NA	NA	0	NA
Consumer Discretionary Social Rating	-0.305	0.695	4	NA	NA	0	NA
Consumer Discretionary Governance Rating	0.106	0.894	4	-0.152	0.267	55	-0.046
Consumer Discretionary Total Current ESG Rating	0.168	0.832	4	-0.123	0.365	56	0.045
Consumer Defensive Environmental Rating	-0.215	0.262	29	NA	NA	1	NA
Consumer Defensive Social Rating	0.105	0.587	29	NA	NA	1	NA
Consumer Defensive Governance Rating	-.381*	0.042	29	NA	NA	2	NA
Consumer Defensive Total Current ESG Rating	-0.194	0.313	29	0.983	0.117	3	-0.789
Health Care Environmental Rating	NA	NA	1	NA	NA	0	NA
Health Care Social Rating	NA	NA	1	NA	NA	0	NA
Health Care Governance Rating	NA	NA	1	0.243	0.064	59	NA
Health Care Total Current ESG Rating	NA	NA	1	0.061	0.635	63	NA
Financial Environmental Rating	0.686	0.201	5	NA	NA	0	NA
Financial Social Rating	0.025	0.968	5	NA	NA	0	NA
Financial Governance Rating	-0.409	0.495	5	-0.138	0.288	61	0.271
Financial Total Current ESG Rating	0.355	0.558	5	-0.138	0.288	61	0.217
IT Environmental Rating	-0.146	0.22	72	-0.843	0.361	3	-0.697
IT Social Rating	.274*	0.02	72	-0.295	0.809	3	NA
IT Governance Rating	0.09	0.451	72	NA	NA	1	NA
IT Total Current ESG Rating	0.069	0.562	72	-0.813	0.187	4	-0.744
Communications Environmental Rating	NA	NA	0	NA	NA	0	NA
Communications Social Rating	NA	NA	0	NA	NA	0	NA
Communications Governance Rating	NA	NA	0	0.083	0.693	25	NA
Communications Total Current ESG Rating	NA	NA	0	0.083	0.693	25	NA
Utilities Environmental Rating	0.163	0.437	25	NA	NA	2	NA
Utilities Social Rating	-0.247	0.234	25	NA	NA	2	NA
Utilities Governance Rating	-0.216	0.299	25	NA	NA	1	NA
Utilities Total Current ESG Rating	-0.123	0.557	25	-0.776	0.435	3	-0.653
Real Estate Environmental Rating	-0.188	0.367	25	-0.31	0.799	3	-0.122
Real Estate Social Rating	0.154	0.463	25	-1.000*	0.02	3	NA
Real Estate Governance Rating	0.143	0.495	25	NA	NA	2	NA
Real Estate Total Current ESG Rating	0.071	0.736	25	-.925*	0.025	5	NA

*Statistically significant at the 5% level

**Statistically significant at the 1% level

Appendix B

Table 6 Correlations between Abnormal Returns and ESG Changes

	Firms with Complete Ratings			Firms without Complete Ratings			Correlation
	Pearson Correlation	P-Value	N	Pearson Correlation	P-Value	N	Difference Absolute Value
Energy Environmental Change	0.101	0.682	19	NA	NA	2	NA
Energy Social Change	-0.2	0.412	19	NA	NA	2	NA
Energy Governance Change	-0.045	0.853	19	NA	NA	0	NA
Energy Total Current ESG Change	-0.03	0.904	19	NA	NA	2	NA
Materials Environmental Change	-0.334	0.139	21	NA	NA	2	NA
Materials Social Change	-0.184	0.425	21	NA	NA	2	NA
Materials Governance Change	0.285	0.211	21	NA	NA	0	NA
Materials Total Current ESG Change	-0.276	0.225	21	NA	NA	2	NA
Industrials Environmental Change	-0.131	0.325	59	-0.604	0.396	4	-0.473
Industrials Social Change	0.006	0.966	59	0.642	0.358	4	-0.636
Industrials Governance Change	0.078	0.557	59	0.329	0.525	6	-0.251
Industrials Total Current ESG Change	-0.057	0.666	59	0.337	0.284	12	-0.28
Consumer Discretionary Environmental Change	0.62	0.38	4	NA	NA	0	NA
Consumer Discretionary Social Change	-0.04	0.96	4	NA	NA	0	NA
Consumer Discretionary Governance Change	0.85	0.15	4	-0.046	0.739	54	0.804
Consumer Discretionary Total Current ESG Change	0.567	0.433	4	-0.048	0.727	56	0.519
Consumer Defensive Environmental Change	-0.204	0.289	29	NA	NA	1	NA
Consumer Defensive Social Change	-0.06	0.758	29	NA	NA	1	NA
Consumer Defensive Governance Change	-.431*	0.019	29	NA	NA	2	NA
Consumer Defensive Total Current ESG Change	-0.285	0.133	29	-0.032	0.98	3	0.253
Health Care Environmental Change	NA	NA	1	NA	NA	0	NA
Health Care Social Change	NA	NA	1	NA	NA	0	NA
Health Care Governance Change	NA	NA	1	0.24	0.07	58	NA
Health Care Total Current ESG Change	NA	NA	1	0.231	0.068	63	NA
Financial Environmental Change	0.139	0.823	5	NA	NA	0	NA
Financial Social Change	-0.312	0.61	5	NA	NA	0	NA
Financial Governance Change	-0.393	0.513	5	0.054	0.682	61	0.339
Financial Total Current ESG Change	-0.156	0.803	5	0.054	0.682	61	0.102
IT Environmental Change	-.242*	0.042	71	0.428	0.572	4	NA
IT Social Change	-0.013	0.915	71	0.062	0.938	4	-0.049
IT Governance Change	0.082	0.498	71	NA	NA	1	NA
IT Total Current ESG Change	-0.149	0.215	71	0.552	0.335	5	-0.403
Communications Environmental Change	NA	NA	0	NA	NA	0	NA
Communications Social Change	NA	NA	0	NA	NA	0	NA
Communications Governance Change	NA	NA	0	0.175	0.436	22	NA
Communications Total Current ESG Change	NA	NA	0	0.159	0.446	25	NA
Utilities Environmental Change	0.128	0.542	25	NA	NA	2	NA
Utilities Social Change	-0.276	0.182	25	NA	NA	2	NA
Utilities Governance Change	-0.152	0.468	25	NA	NA	1	NA
Utilities Total Current ESG Change	-0.129	0.54	25	-0.444	0.707	3	-0.315
Real Estate Environmental Change	-0.104	0.62	25	0.363	0.763	3	-0.259
Real Estate Social Change	-0.12	0.567	25	-0.709	0.499	3	-0.589
Real Estate Governance Change	-.577**	0.003	25	NA	NA	2	NA
Real Estate Total Current ESG Change	-0.184	0.378	25	-0.832	0.081	5	-0.648

*Statistically significant at the 5% level

**Statistically significant at the 1% level